OHIO
MEDICAL AND SURGICAL JOURNAL.

Vol. 14. Columbus, March 1, 1862. No. 2.

Original Communications.

Army Diseases. By Surgeon R. N. Barr.

Camp at Summerville,
Western Virginia, Jan. 10, 1862.

J. Dawson, M.D., *Editor Ohio Medical and Surgical Journal:*

Dear Sir:—Eight months since, on entering the Medical staff of the great army, hastily organized for quelling the rebellion, and preserving the Confederacy, it was my intention to transmit to you for publication in your valuable journal, such matters of professional interest as, from time to time, came under my observation. But, I soon found my time so completely occupied, by the medical requirements of those assigned to my care, as to prevent all correspondence, except such as were purely of a business or social character.

As a substitute for what I designed to do, I herewith transmit you a copy of my "official report" (together with the tabular statement of the sick, wounded and dead) of the sanitary condition of the Thirty-Sixth Regiment Ohio Volunteers U. S. A., for four months ending December 31st, 1861, with such interpolations and additional remarks, as may be of interest to the profession.

On the withdrawal of the Ohio State troops from Western Virginia, by reason of expiration of term of enlistment, in the latter

part of August last, I was, by his Excellency Governor Dennison, assigned as Surgeon to the Thirty-Sixth Regiment Ohio Volunteers, then organizing "for three years or the war," at Marietta, Washington county, Ohio. I reported for duty on the the 24th of said month, (August) and immediately commenced the inspection of the men, preparatory to their being mustered into the United States service. The organization was completed on the last day of the month—the Regiment containing nearly the maximum number, including officers and enlisted men about 1,040. The enlisted men, were mostly young men, from the rural districts of Washington, Jackson and Athens counties, of industrious and temperate habits, and patriotic to the highest degree—most of them in comfortable, and many of them in affluent circumstances. As soon as the organization was effected, the Regiment was assigned to Gen. Rosecrans' Division, in Western Virginia, and immediately took the field, under orders to effect a junction with the main division of the army, then on the march from Clarksburg, Virginia, to attack Gen. Floyd's Division, of the Confederate forces, supposed to be at some point on the Gauley River, or its tributaries, in Braxton or Nicholas counties. The route of a portion of the Regiment (six companies), was by forced marches up the Little Kanawha, to its headwaters, at Bull Town Saltworks—skirmishing often with bands of bushwhackers—thence, Southwesterly to Sutton, on Elk River, in Braxton county, and thence, in the same general course over Powell's and Birch Mountains, to Summersville, Nicholas county, effecting a junction with the main division of the army of Western Virginia, at Carnifex Ferry, on the Gauley River near Summersville, just two days after the sanguinary battle at that place, on the 13th of September. Since that date the Regiment has been stationed at Summersville, together with one company of Pennsylvania Dragoons, for courrier duty, and whose medical and surgical wants were confided to my care, and so reported in my Regimental Report, herewith submitted. On the removal of the main division of the army, about fifty of the sick and wounded, of the Twelfth Regiment Ohio Volunteers, were left in my care; also, the sick

and wounded of detachments of other Regiments, mostly of Virginia Volunteers, who were with us on the march, or were stationed at times in our vicinity, were also under my charge, but do not appear in this report, but special reports of them were from time to time, made to their respective Regimental Surgeons, and by them to the proper Department. It is proper here to remark, however, that in all the skirmishing or guerrilla warfare, which is constantly being waged in this part of the field of operations, the Virginia Volunteers and *Home Guards*, suffered in killed and wounded much more than the Ohio or Regular troops, from the fact that the Secession or Confederate forces, seemed to hold them in special malignity, and made them the special mark of their long rifles, which they used in some instances with terrible effect upon them.

On the march from Parkersburg, at which point we crossed the Ohio River, to Summersville, we were at all times upon the upper Coal Measure. The stratified rocks were chiefly sandstone and shales; very little lime was seen, and few workable seams of coal. The valleys are those of erosion, worn out by the natural draining of the surface during long geological ages. On the lower portion of the Little Kanawha River, the strata are very nearly horizontal. The only exception to this is at Burning Spring, Wirt county, a place visited by a part of our force. Here the river crosses a remarkable line of up-lift of strata. It is in the subterranean fissures along the anticlinal line of this disturbance, that vast quantities of petroleum distilled from bituminous strata below have accumulated, and the oil wells which strike these, are the most productive in the *world*.

The waters of the Little Kanawha and its tributaries, especially near its mouth, are generally turbid, rendered so by the disintegrated clay shales, brought down by every streamlet. The water, however, is not thought to be unhealthy. Such is the geological formation, that very few springs are found on the hill sides. The timber on the hills is chiefly oak; in the valleys, the beautiful "Magnolia Virginiensis" is often found. Higher up, the stream becomes more clear and attractive. The Elk River, where we

crossed it at Sutton, in Braxton county, is very clear and beautiful. Birch and Powell Mountains, lying between Elk and Gauley Rivers, are rather ranges of enormous hills than mountains. They are composed of horizontally stratified rock, chiefly sandstone. The valley, and lower grounds on either side of these, have been gradually worn away, leaving these high elevations as the interesting remains of strata which, once were of vast extent. Summersville, where the Regiment is still *bivouaced*, is in the carboniferous formation, and the hills on all sides abound in coal. The soil is made up chiefly of disintegrated clay shales. It is a wet, cold soil, and the decomposition of vegetable matter, which should take place in the summer is delayed, thus making the autumn and early winter unhealthy; and in consequence of which, together with other causes hereafter to be mentioned, our troops suffered with a terrible epidemic of severe and decimating *fever*.

A part of the Regiment came to this place from Parkersburg, Virginia, to Pt. Pleasant by steamboat, and thence, by the same mode of conveyance up the Great Kanawha, to Camp Piatt, eleven miles above Charleston. Near Camp Piatt, are the once famous Kanawha Salines. The brine comes from depths varying from 1,000 to 1,400 feet below the surface. The area in which good wells can be found is small. This limitation of area, is doubtless due to the particular circumstances under which the saliferous sand rock was originally deposited. At Cannelton, on the march from Camp Piatt to Gauley Bridge, a remarkably fine seam of cannel coal is found, besides several seams of common bituminous coal.

Some coal plants of unsurpassed beauty were also seen. The Kanawha in its upper part flows in a deep gorge like channel, having excavated its bed by the slow work of erosion. The scenery on its banks is exceedingly picturesque, and in many places grand. The road upon the banks often passes under high, belting crags, and there are many places where a small force could hold back a large army. The road from Gauley Bridge to Summersville, passes a part of the way along the banks of the Gauley River.

This river has also excavated a deep valley, which in many places may almost be called a canon, so bold are the overhanging cliffs.

The amount of sickness in the Regiment has been, as the tabular statement shows, very great, and with a gradual increase as to the number of cases and malignancy from the 1st of September till about the 20th of December. But the fever cases did not assume the genuine typhoid character in our Regiment, until about the middle of October, although it existed in that character and with great severity in the Twelfth Regiment Ohio Volunteers, in Summersville, at the time of our arrival on the 15th of September, the fatality among them, being not less than one in six or seven cases. During the march from Parkersbug to this place, the health of the troops was comparatively good, a few broke down by the way, footsore and exhausted, and some suffered with diarrhœa, but this, as a general rule, was easily controlled. The march was made under peculiar and trying circumstances for the troops, and in many a brave soldier, during that march of 190 miles, were the seeds sown which afterward germinated in disease and resulted in death. The emergency being great, the field of active operations was taken before the Commissariat, Quartermaster and Hospital Departments were adequately supplied. Every thing necessary in all the departments had been ordered, and to the honor of the heads of these departments, be it said, that every proper requisition was promptly and fully honored, but the time was too limited, consequently at the outset we had neither tents, blankets, nor, with a few exceptions, overcoats—but few medical and no hospital stores, and these deficits were not and could not be supplied for nearly two months. The men had not even a change of wearing apparel. During the march it rained almost daily. In the mountains the weather was cold and chilly for the season. A greater part of the route, skirmishers had to be kept out, scouting the hill sides and tops, to prevent the battalion from being ambuscaded by bands of bushwhackers. The hills were in many places very rugged and precipitous, always thickly covered with undergrowths and always wet, making this duty very laborious and exhausting; and also, productive of

another serious evil, viz: Hernia Inguinalis. It is easy to understand how a hernia can be produced by the straining and fatiguing labor of continually clambering up and down precipitous hills, carrying a heavy musket, and wearing a tight belt with from twenty to forty rounds of ammunition in the cartridge-box attached thereto. From this cause we lost two men; in one, although, the hernia was reduced as soon as the subject was presented to me, but intussuceptio followed, as a post mortem revealed. In the other, reduction by the taxis failing, the knife was resorted to, but gangrene had taken place in the strangulated bowel, and the patient succumbed in six hours after the operation. In this case the poor fellow had suffered in silence and concealment for four days, and until stercorations vomiting set in. To remedy this evil as far as possible, which threatened to be a serious one, on my recommendation, the belt with cartridge-box attached, was worn loosly, and kept in position by leather straps pressing over the shoulders.

Under all the depressing circumstances of the march, the command bore up under it well, hoping and expecting at the end of it a battle and a glorious victory. *The battle and the victory came,* but our battalion did not reach the scene of action until two days after the engagement, and our wearied, disappointed and disheartened troops were ordered into quarters at this post (Summersville), where we were joined some four weeks later by the remainder of our Regiment, and where we have remained ever since, performing a large amount of scouting and foraging duty. The town is situated in a small valley, about four miles from Gauley River, and surrounded on all sides by high hills. The soil, as before stated, is made up of disintegrated clay shales, and is cold and wet. The houses, from forty to fifty in number, are generally small log structures, illy constructed, with low ceilings, and but few and small windows. The *denizens* having deserted the place, our troops occupy the houses; the town had been previously, and alternately, occupied by the Federal and Confederate forces, and was very filthy. The 12th Regiment had a hospital there containing about 40 patients—a few wounded, but mostly camp or Typhoid Fever

cases. The Hospital was on an eminence at the west end of the village; was very small, and consequently much crowded, having as many as twelve fever patients in a room of 14 by 16 feet, and with a ceiling of not over 7 feet high. The 12th Regiment was ordered to another post, and their sick were left under my charge; and as my medical and hospital stores had not yet been brought up, and but few being left with me, I was much crippled as to medical resources, but immediately secured another building; thinned out my patients to from four to six to a room; depended mostly and of necessity to ventilation; kind and cheering words; some stimulation to those most exhausted and emaciated, with such nourishing diet as could be obtained from the Commissariat Department and in the neighborhood. This course had its effect upon the men. They became more cheerful and hopeful, the desperate cases were put in different rooms from the more hopeful, and as they died, they were quietly and secretly removed and interred; but the per centum of mortality was large—five out of the party died, but one of these was a gunshot wound; the man was shot through the right breast; the ball, from a large bore rifle, entered the thoracic cavity, just below the nipple on the right side, fracturing the sixth rib as it entered, passed through the lung, and out about two inches to the right of the centre of the spinal column, and fracturing the seventh rib near its articulation as it passed out. The patient survived the injury but three days.

While speaking of this case, I will remark that gunshot wounds, penetrating the lungs, if one lung only be injured, are not necessarily fatal. During the campaign, I have treated five persons where the parties were shot in the breast, the ball or shot passing entirely through the thoracic cavity and lung, or lodging in the walls, and was removed with the knife and forceps; and the one above alluded to being the only one that proved fatal. Very little treatment is required in these cases; simple, light cold-water dressings is all that I found necessary, with a light unstimulating diet. The same remark is true of gunshot wounds in a large majority of cases. A ball or buck-shot passes through the fleshy portion of the body,

or a limb, if the bones or important blood-vessels be uninjured, usually nothing more is required than simple cold-water dressing, a piece of lint held in position by a fold or two of roller, or what is easier applied, a couple of strips of Husband's adhesive plaster, with perfect rest, is the only treatment usually required. Fortunately the arteries are seldom injured; being elastic and contractile, they have a happy faculty of getting out of the way. I have seen instances where a ball passed through the upper arm or thigh, apparently in the direct line of the brachial or femoral arteries, and yet these vessels sustained no injury, and a few weeks was sufficient to repair the injury sustained to the limbs. In fact, operative surgery is by far the smaller portion of an army Surgeon's labor and duty—the wounded by far the fewer number of his patients, and the killed constitutes but a small share of his mortality bill, even in time of active campaigns. And he is by far the most successful and useful army surgeon who exercises the most constant vigilance over the general welfare of the command assigned to his medical care—who enforces with inflexible will and untiring energy the rigid hygienic rules laid down in the Army Regulations—who exercises his judgment, his influence *and his authority* in the selection and location of encampments; all these matters he must attend in person—not by proxy. In the Volunteer service much devolves on the Surgeon that, in the Regular service, is done by company officers, from the fact that, in the Volunteer service, these officers are ignorant of the vital importance of these matters, and are slow to learn them.

Soon after our arrival at this post, the troops of our regiment began to be attacked with intermittent, remittent, and continued fever, and a hospital was established for their reception in a different part of the village from the hospitals of the 12th Regiment, containing the Typhoid patients. But at this early day these forms of fever presented some of the Typhoid characteristics, which so manifestly characterized the epidemic that soon followed, as was apprehended. There were prostration and muscular soreness to a much greater extent than usually attends these forms of fever;

severe pains in the back part of the head, and a stiffness and soreness of the muscles of the neck, particularly the sterno cleido mastoid were universally present—these in fact were the pro dromes of the coming troubles. The chills were light, but came at regular intervals, usually in the early part of the day. The reaction was not great, but the febrile stage in the intermittents continued till 8 or 9 o'clock in the evening; but the pulse never came down to its normal standard as to frequency, even when the intermission in other respects seemed perfect and the sweating stage well marked. The condition of the tongue was also peculiar and uniform. It was very broad and large, having the impressions of the teeth around the entire border, and deeply creased in the centre; was tremulous, and was protruded with difficulty and slowly; was usually covered with a heavy, dark-brown coating in the centre and back portions; the edges and tip red, and although there was considerable diarrhœa in camp in the early autumn with these forms of fever, it was not, with few exceptions, a troublesome complication. As the season advanced, and the fever in our camp became more and more of the Typhus or Typhoid character, diarrhœa became less frequent, and oftentimes, unless laxatives were administered, the bowels would not be moved for two, three, and four days. Anti-periodics, even in the cases where the remissions were the most perfect, seemed to act slowly and imperfectly in controlling or interrupting them; and where the remissions were less perfect, it had no other influence except to increase the cerebral disturbance, produce greater dryness of the tongue and fauces, and the frequency of pulse. But after convalescence was established, quinine in small quantities, in connection with wine, had a very happy effect in aiding the recuperative powers. Gradually the new cases assumed more and more of the true Typhus character, and by the middle of October it was manifest that we were doomed to an epidemic of what is commonly called the Camp Fever, but what was evidently a true Typhus Fever.

The number of cases increased in frequency and severity. The men came in by scores, at Surgeon's call in the morning, to report

themselves on the sick list, and for medical aid. A moment was sufficient for making a diagnosis; almost all were alike affected. Slowly, and with an unsteady gait, a pale face and pinched features, would the poor men come up, one after another for hours, to be prescribed for and ordered to the hospital, and from which they would not emerge again for three, four or six weeks, unless to be carried to a soldier's grave. The disease was generally ushered in by a sensation of chilliness, severe pain in occipital region, or occipito-temporal regions, with great soreness and stiffness of the muscles of the back and sides of the neck, and general physical prostration; the pulse frequent and feeble; tongue large, flabby, heavily coated with a dark brown coating, deeply creased in the centre, and protruded with difficulty; utterance slow; skin dry, and of a dusky hue—not hot. The sclerotic coat of the eyes also presented a bronzed or dusky appearance; the urine was scanty, and high colored; in fact there seemed to be a lacking of, or suspension of all the secretions. In the course of from two, three, four days, or a week, in proportion to the virulency of the morbific action, coma, partial or complete, or delirium would ensue; sordes would collect in large quantities on the teeth and lips; the tongue become perfectly dry and crisped. But there was seldom present any tendency to diarrhœa; no tympanites, but occasionally troublesome gastric irritability.

At the end of this stage, if the patient survived it, profuse perspiration came on; the disposition to coma disappeared; for a few days there would be a partial return to consciousness—a period of mingled hope and fear to the surgeon. But, with the sweating stage, *did not come the rose-colored spots, or petæchea, nor tympanités;* occasionally, but rarely, even the sudamina (the sweat was of a cold, clammy character); nor did diarrhœa present itself sufficiently frequent to be called pathognomonic, except in those cases that were to terminate fatally, a few hours before death, when there was a perfect relaxation of the entire system—a letting go, as it were, of the powers of life. Not unfrequently large hemorrhages from the bowels would occur; sometimes these

would occur less freely at first, and continue at frequent intervals for several days; but this was purely a hemorrhage, and not a diarrhœa. On pressure, however, over the illiac regions, more or less tenderness was generally found to exist. And occasionally there was diarrhœa; but much more frequently the bowels were costive through all the stages of the disease, or until within a few hours before death, in fatal cases.

A peculiar feature in the disease was, that in almost every case of any severity, with the appearance of the sweating stage, there appeared glandular inflammations, generally in the parotids or submaxillaries—in two instances, it appeared in the testicles. These swellings would attain to an enormous size. Sometimes they would terminate by resolution, but more frequently by suppuration. Abscesses in other places too were of common occurrence and from them would come an incredible amount of purulent discharge. Decubitis was also frequent. There was also another concomitant that was peculiar and altogether new to me: that was a severe pain in the feet. It usually made its appearance in the great toe, and was gradually extended to all the toes of both feet, and sometimes involving the whole of both feet and ankle-joints. It was seldom accompanied with swelling. The pain was excruciating in severity, appeared to be neuralgic in character, and was temporarily relieved by warm fomentations and anodynes.

But experience soon taught me to hail its appearance with *joy*—for it was invariably *the harbinger of convalescence.* This was so apparent and uniform as to be observed by the attendants; and on making my appearance in the hospital wards, the nurse would say to me—*Such* a man is going to get well, for he has been groaning all night, or all day, with a pain in *his big toe.*

In the table of classification, it will be observed that there are but 233 reported as typhoid, 18 as typhus, and 344 of all forms of idiopathic fever. But double this number might very properly have been put in this classification; for everything took on the typhus character, and would run the usual course of that fever. Rubeola, which made its appearance about the middle of October,

proved a very troublesome complication; frequently either preceding or appearing near the close of the fever, and, when complicated with pneumonia, almost universally proved fatal.

Before attending to the treatment, it is proper to remark, that as soon as it was evident that we were in danger of an epidemic, every possible effort was made, so far as practicable, to avert and modify its virulency; and in every suggestion, as to the general hygienic rules for the government of the camp, I had the hearty co-operation of our worthy Colonel (Geo. Crook), who, being a military man by profession, and large experience in camp and military life, was prepared to act with intelligence. The houses being too small and few in number to accommodate the men, without overcrowding, as soon as it was practicable, additional barracks were built; but, for this purpose, a saw-mill had first to be constructed, and lumber sawed; and, as before remarked, the place having been previously, and for a considerable time, occupied as a camp, was very filthy. All filth, rubbish, offal, and everything calculated to engender disease, was removed. Sinks were removed to long distances from the barracks. A thorough drainage for the removal of all surface water was made. Board walks, to keep the men out of the "sea of mud" that everywhere prevailed, were constructed. As early as it was possible to obtain them, an abundant supply of good and warm clothing and blankets were supplied the men. Daily rations of fresh beef were issued, and potatoes, or dessicated vegetables, when they could be obtained. A rigid surveillance was had over the culinary departments of the men, and also as to their habits of cleanliness of person, apparel and quarters; and, as thorough drilling is necessary to make good and scientific soldiery, for this purpose, a large drill-house was built, that the men might have the proper training without exposure to the mud and pitiless storms of rain, snow and sleet that were of almost daily occurrence. The drill had also the good effect of keeping the men mentally and physically occupied, and prevented them from huddling together in large numbers in their quarters, and thus breathing a vitiated atmosphere, for long periods of time.

But there were exciting causes which we could not remove or remedy. The location was unhealthy, and engendered disease from causes before mentioned. Our men went into this camp exhausted from a long march and over much exposure. They had a large amount of scout, forage and guard duty to perform. Whole companies, or two or three of them, would be out for three or four days and a week at a time, with no shelter at night but the *leaky heavens*, and no provender except what they could carry in their haversacks Are these causes not sufficient, without looking further—without looking for some occult operation of nature—or without blindly attributing to a specially appointed dispensation of a Divine Providence, this epidemic, so malignant and widespread, through our regiment? Another evidence in favor of causes above assigned, is, that the officers, who, from the outset, were better clad, *better fed*, and provided themselves with better quarters, though not exempt, were attacked in a less pro rata, and with less virulency—not one commissioned officer, up to this date, having died out of our command.

About the 1st of December, the daily average of the sick list having reached 240, and still on the increase, and the whole command laboring under the enervating and depressing morbific influences to which it was exposed, I recommended my assistant surgeon, Dr. J. H. Whitford, concurring, the issuing of two ounces of whisky daily—one in the morning and one in the evening—to all the troops who were on *police*, on guard duty, or out on scouting or foraging expeditions, or from any cause exposed to the inclement weather, or employed in exhausting labor. I was led to expect beneficial results by this course, as a prophylactic, for two reasons: 1st. Because of the great depression of the vital energies and impairment of envervation, not only of those on the sick list, but of the whole camp. 2d. I had observed that, in the beginning of the epidemic, I could not keep nurses in the hospitals, where, notwithstanding the ventilation was as good as can be attained in any hospital, the morbific action was great, for more than three or four days, until they were taken down with the fever, I soon com-

menced the administration of one ounce of whiskey to every nurse or attendant in the hospitals, before each meal. The result was, I could keep a nurse as long as was desirable, without his suffering deleterious effects from confinement in the wards of the hospitals. I spent from six to eight hours a day myself among the sick, but always fortified myself against the depressing tendency of the vitiated air of the wards, with an ounce of whisky, morning and evening, before commencing my rounds, and escaped with a very mild attack of the fever.

I was not disappointed in the effects of the administration of the alcoholic stimuli. Almost immediately, new cases of fever became fewer, and much milder in character. For the twenty days last past, very few new cases have appeared, and they of a mild character. The wards of the hospitals are thinning out, and health, cheerfulness and happiness are again returning to our camp.

In regard to the treatment, I have to say that the complications were so many and so various, that the treatment, as a matter of necessity, had to be varied. In the first place, perfect ventilation and cleanliness were rigidly enforced. During the early stage of the epidemic, while yet it had more of the specific features of a malarial than a typhus fever, quinine and the antiperiodics generally so sadly disappointed me in its effects, that later in its progress, when it had assumed a graver form and a more genuine typhus character, I had little faith in this drug as a curative agent; and when administered in the first stage of the fever, it seemed only to aggravate, by increasing the delirium, the frequency of the heart's action and the dryness of the tongue (alcoholic stimuli had the same effect); showing that what acts admirably as a preventive of a fever, will not cure it when once seated. In fact, I am about ready to agree with Watson, when he says "we cannot cure a fever;" but we can do much to conduct a fever patient safely through, when he would *be wrecked* if left to its pitiless storm. As the bowels were generally costive in the outset, I usually administered a laxative or mild cathartic, or, if much gastric irritability or

nausea, an emetico-cathartic; from this, much relief to the pains in the back of the head, neck and back were afforded. And whatever may be said to the contrary, I found a small dose—four or five grains—of calomel, with about half the amount of ipecacuanha, followed, in from four to six hours, if necessary, with castor-oil and turpentine, to answer a better purpose than any other drug.

The effect was not merely to unload the stomach and bowels of any irritating substance; but the relief to the head and back was most marked and manifest. The thirst and dryness of the tongue and fauces were diminished, by at least the partially restored function of the salivary glands. The effect upon the circulating system was also evident, in diminishing the frequency of the pulse, while its volume was not diminished. The oleaginous mixture was repeated with sufficient frequency to keep the bowels in an open and solvent condition. Alkalines were exhibited *ad libitum*, and diuretics and sudorifics during the more febrile stage. When great nervous irritability was present, with delirium and wakefulness, camphor and opium were, at bedtime, given, not in measured quantities, but till quiet and sleep were induced. At the earliest appearance of a moist and relaxed skin, a tonic and stimulating course was resorted to, with a nourishing diet; and this course was pushed in proportion to the amount of exhaustion. Where the exhaustion was great, with a heavy drain from purulent abcesses, or, in a few instances, from diarrhœa, the amount of tonics and stimulants required were almost incredible, and during this stage, *quinine and alcoholic stimuli became indispensable.* In a few instances during the early stage, where the fever was of a more sthenic character, or where pneumonia was present, veratrum was given; but I cannot say that it had any other effect than simply to reduce the heart's action. I have never been satisfied with the action of this drug, except in the primary stage of pneumonia—and even here, antimony and calomel have been more satisfactory in their results than veratrum.

Of the divers complications met with in the course of this epidemic, and the various modifications of treatment to meet them, I

will not now speak; in another communication I may allude to them at some length. In conclusion I will express the hope that the result attained in the treatment of those confided to my care, will meet the hearty approval of the Chief of the Medical Staff of the Army, and of the public generally. I think the result will compare favorably with that attained, during similar epidemics, in civil hospitals and in private practice, in this country. As is shown in the tabular portion of my report, the deaths of typhus and typhoid fever are 1 to 16 cases; and of all forms of idiopathic fever, 1 in 21¼ cases; and of the whole number of cases of sickness and wounds, 1 to 37 cases; and, as elsewhere stated, it must be borne in mind, that every disease seemed to be transformed in this terrible typhus scourge. In the Crimean war, during the epidemic of typhus fever, 35,000 French soldiers were attacked with it; and Serive, in his report, says 17,515 were by it placed "*hors du combat*," or over 50 per cent. The report of the English Medical Director-General has but a slightly better showing.

Report of the Sick and Wounded of the 36th Regiment, O. V. U. S. A., serving in Western Virginia, for the months of September, October, November and December, 1861.

Classes of Diseases.	Specific Diseases.	Taken sick or received into hospital during four months.										Remarks.
		Sept.		Oct.		Nov.		Dec.		Total by each Disease.		Total by each Class.		
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
Fevers	Febris Congestiva	2	.....	.....	.....	.....	.....	.....	.....	2	.....	344	16	Of deaths of typhus and typhoid fevers, 1 in 16 cases. Of deaths, of all forms of fevers, 1 in 21¼ cases.
	" Continua	.....	.....	22	.....	9	.....	.....	.....	31	.....			
	" Intermittens	14	.....	23	.....	12	.....	.....	.....	49	.....			
	" Remittens	6	.....	5	.....	.....	.....	.....	.....	11	.....			
	" Typhoides	2	.....	38	3	140	6	53	6	233	15			
	" Typhus	.....	.....	.....	.....	.....	.....	18	1	18	1			
Eruptive Fevers	Erysipelas	.....	.....	.....	.....	1	.....	2	.....	3	.....	112	.....	
	Rubeola	.....	.....	16	.....	62	.....	31	.....	109	.....			
Diseases of the Organs connected with the Digestive System	Cholera Morbus	2	.....	3	.....	7	.....	.....	.....	12	.....	213	.....	
	Constipatio	3	.....	9	.....	9	.....	11	.....	32	.....			
	Diarrhœa	37	.....	34	.....	26	.....	13	.....	110	.....			
	Dysenteria	1	.....	19	.....	11	.....	.....	.....	31	.....			
	Dyspepsia	.....	.....	.....	.....	2	.....	.....	.....	2	.....			
	Exhaustio	13	.....	.....	.....	.....	.....	.....	.....	13	.....			
	Gastritis	.....	.....	4	.....	.....	.....	.....	.....	4	.....			
	Hepatitis	.....	.....	3	.....	.....	.....	.....	.....	3	.....			
	Splenitis	.....	.....	.....	.....	1	.....	2	.....	1	.....			
	Tonsilitis	.....	.....	1	.....	2	.....	2	.....	5	.....			

REPORT OF THE SICK AND WOUNDED—Continued.

Class of Diseases.	Specific Diseases.	Taken sick or received into hospital during four months.								Total by each Disease.		Total by each Class.		Remarks.
		Sept.		Oct.		Nov.		Dec.						
		Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	
Diseases of the Respiratory System	Asthma	.....	.....	1	.....	.....	.....	.....	.....	1	.....	195	7	Of the cases recorded of Typhoid pneumonia, the per centum of deaths is great; but in every case, with one exception, it was complicated with Rubeola.
	Bronchitis	.....	.....	2	.....	.....	.....	.....	.....	2	.....			
	Catarrhus	6	.....	25	.....	63	.....	49	.....	143	....			
	Diphtheria	.....	.....	3	.....	16	.....	8	.....	27	.....			
	Phthisis Pulmonal.	2	.....	2	.....	2	.....	1	.....	7	.....			
	Pleuritis	.....	.....	.....	.....	2	.....	2	.....	4	.....			
	Typhoid Pneumonia	.....	.....	.....	.....	1	.....	10	7	11	7			
Diseases of the Circulatory System	Varicocele	.....	.....	.....	.....	1	.....	1	.....	2	.....	3	.....	
	Endocarditis	.....	.....	1	.....	.....	.....	.....	.....	1	.....			
Diseases of the Brain and Nervous System	Epilepsia	.....	.....	2	.....	.....	.....	1	1	3	1	9	1	
	Neuralgia	.....	.....	3	.....	.....	.....	.....	.....	3	.....			
	Neuralgia Fasciale.	.....	.....	.....	.....	1	.....	.....	.....	1	.....			
	Sciatica	.....	.....	2	.....	.....	.....	.....	.....	2	.....			
Diseases of the Urinal and Genital Organs, and Venereal Affections	Orchitis	.....	.....	.....	.....	2	.....	.....	.....	2	.....	4	.....	
	Sarcocele	.....	.....	.....	.....	1	.....	.....	.....	1	.....			
	Urethritis	.....	.....	.....	.....	1	.....	.....	.....	1	.....			
Diseases of the Fibrous & Muscular Structures	Rheumatismus	9	.....	13	.....	9	.....	1	.....	32	.....	33	.....	
	Coxalgia	.....	.....	.....	.....	.....	.....	1	.....	1	.....			

Wounds and Injuries	Abscesses			2		2				4		49	1
	Carbuncle			4						4			
	Phlegmon	3				1				4			
	Ulcus	5		2		1				8			
	Vulnus Combustio.					1				1			
	Contusio					1		1		2			
	Fractura			1						1			
	Hernia			2		5	1			7	1		
	Sub Luxatio	3						1		4			
	Vulnus Incisum	1		2		2				5			
	Vulnus Sclopeticum			7				2		9			
Diseases of the Eye	Ophthalmia	2		7		4				13		15	
	Conjunctivitis							2		2			
All other Diseases	Debilitas	4		1				2		7		25	1
	Hæmorrhoides	1				2		1		4			
	Morbicutipedis	1								1			
	Herpes			1		3				4			
	Scabies					4				4			
	Intussuceptio			1	1					1	1		
	Colitis							1		1			
	Jaundice							3		3			
Summa												1,002	27

GENERAL SUMMARY.

REMAINING LAST REPORT.		REMAINING.	MEAN STRENGTH.				Number treated.	Deaths.	RATIO PER 1000 OF MEAN STRENGTH.		REMARKS.
			Months.	Officers.	Enlisted Men.	Total.			Cases.	Deaths.	
—	Sick.										
—	Convalescent.										
—	Total.										
1002	Taken sick during last four months.										
—	Aggregate.										
—	Sent to General Hospital.										
799	Returned to duty.										
—	On furlough.										
7	Discharged.										
—	Deserted.										
27	Died.										
46	Sick.										
125	Convalescent.										
171	Total.										
			September.....								
			October.....								
			November....	38	984	1022					
			December....								
			.....	38	984	1022	1002	27	99·8	2·69	1 d'th to every 37th case of illness and wounds.

To the mean strength should have been added, for three months, a company of Pennsylvania Dragoons, consisting of 3 officers and 49 enlisted men.

Discharges on Surgeon's Certificate, and Deaths.

Name.	Rank.	Regiment.	Company.	Disease.	Date of Discharge from service.	Date of Death.
Steward, Thomas	Private	36	G	Inntussuciptio		October 20, '61.
Tilton, Douglas	"	36	F	Febris Typhoides		October 20
Grudier, John	"	36	G	Febris Typhoides		October 23
Summers, John R	"	Pa. Dragoons		Febris Typhoides		October 28
Beckley, Edward	"	36	C	Febris Typhoides		November 2
Nicholson, James W.	Q. M. Sergeant	Pa. Dragoons		Febris Typhoides		November 7
Jones, James H	Corporal	Pa. Dragoons		Hepatitis chronica	November 11, 1861.	
Davis, Frederick	Private	36	A	Phthisis Pulmon	November 16	
Winchell, Chauncey	"	36	K	Febris Typhoides		November 9
Neibert, James M	"	36	I	Febris Typhoides		November 16
Walthers, James	"	36	B	Hernia		November 23
Holly, Charles	"	36	B	Febris Typhoides		November 28
Clark, Augustus	"	36	B	Febris Typhoides		November 28
Wolcott, Lewis	Sergeant	36	F	Febris Typhoides		December 1
Bradshaw, William	Private	36	C	Epilepsia		December 2
Foster, Warren C	"	36	C	Dislocatio femur	November 26	
Richardson, Edward	Corporal	36	I	Febris Typhoides		December 4
Wintersteen, Joshua	Private	36	H	Hernia inguinal	November 26	
Armstrong, Isaac	"	36	A	Typhoid Pneumonia		December 8
Bradfield, John	"	36	H	Typhoid Pneumonia		December 9
Corp, Joseph	"	36	G	Febris Typhoides		December 10
Pierce, Thomas	"	36	D	Febris Typhoides		December 11
Ewing, Thomas H	"	36	B	Febr. Typhoides cum Pneumonia		December 12

Discharges on Surgeon's Certificate, etc.—Continued.

Name.	Rank.	Regiment.	Company.	Disease.	Date of Discharge from service.	Date of Death.
Ross, Daniel Russel	Private	36	A	Typhus Fever		Dec'ber 12, '61.
Dood, James	"	36	I	Phthisis Pulmon	December 3, 1861	
Green, William M.	"	36	B	Epilepsia	December 3	
Pierce, David	"	36	B	Epilepsia	December 3	
Gates, William H.	"	36	E	Typhoid Pneumonia		December 14
White, James H.	"	36	B	Typhoid Pneumonia		December 24
Foster, Archibald	"	36	G	Febris Typhoides		December 25
Osborn, Samuel	"	36	E	Typhus Fever		December 29
Davis, O. Perry	"	36	I	Febris Typhoid. cum Pneumonia		December 30
McNeal, Dudley	"	36	I	Typhoid Pneumonia		December 31
Byers, William	"	36	H	Typhoid Fever	Died at Weston, Va.	Sept'ber 22, '61.

American and Foreign Intelligence.

Moral Insanity in relation to Criminal Acts. By I. PARIGOT, M.D., Late Commissioner in Lunacy and Chief Physician of Colony of Gheel, Belgium; Honorary Professor of the University of Brussels; Member of Several Academies and Learned Societies.

It is easy to say, *That man is crazy;* but it is not so to prove it. How can a simple affirmation or a medical certificate, without proofs that a man is insane, deprive him of his liberty?

There is no doubt, at least in Europe, and perhaps here, that if mental diseases had been accurately described—if physicians had not contented themselves, and magistrates been satisfied with a single line, assuming, *ex virtute officii*, that a man was to be shut up as insane—many errors, injustices and miseries would have been spared!

It is true an authentic demonstration is not always easy—who is infallible? At all events, when a physician gives his opinion in a court, relating to the life, honor and property of individuals, his office is of the highest character. The importance of his function must elevate his soul and mind above all private interest.

As we have said, it is difficult to say when spiritual causes have sufficiently acted upon our body to elicit insanity. Where is the line or boundary of sanity and madness in a corrupted conscience? Here again our only criterion is medical observation, with this difference, that we ought to be very cautious, and always avoid appearing to be under the influence of some secret motive. It is about the same for everybody concerning the moral cause of insanity. There is also a line we ought not to pass. Every man should take care of his weak side. Education should have, for one of these objects, to fortify our wills, in order to make up for gifts that we may want. Not only is this true, but, as the Scriptures say, the *spirit is the same, but gifts are different.* Let us suppose that a man of ordinary ability would, from the plough, begin and assiduously prosecute high and profound studies. (I have often seen such cases in rural schoolmasters attempting to study divinity.) Now that man will soon feel some premonitory symptoms of an over-exertion and fatigue of his intellectual powers. If he continues his foolish task, he will perhaps very soon say that some light from heaven has descended upon him, and turn a furious maniac.

The so-bitterly criticised theory of a most distinguished alienist, Dr. Moreau de Tours, who asserts that madness is often the result of an over-activity of the brain, is justified in this and many other

causes. When that author affirms that if vital force accumulates in one organ, one of its results must be either a great energy of function or a lesion of that organ, he says something very true. It is in this sense that Dr. Moreau finds some affinity between genius and madness. His antagonist, M. Flourens, though a man of immense talent, is, I fear, a bad judge of the value of this theory, since the learned Perpetual Secretary of the Institute of France, amongst a great number of pamphlets on all sorts of subjects, has written a small compilation entitled *Essai physiologique sur la Folie*, which shows that he never gave much attention to that special subject of medicine.

As insanity cannot exist without a form of exterior disease, so bodily health cannot accompany and is incompatible with a mental infirmity. Symptoms of diastrephia are numerous, and moral insanity or diastrephia presents several phases or stadia during which the following symptoms may be observed:

Generally patients are different in manners, ideas, feelings, conduct, and even language, from what they were before. No delirium or delusion is sometimes perceptible. In some cases bad habits, customs, or indulgencies, are more frequent and become notorious. After a certain time elapses since the premonitory symptoms, patients become incapable of serious occupations. Their will is impaired, their power of control lost, and their instincts let loose; there appear irresistible or unaccountable eccentricities and whims. It is in this period that sometimes delusions or a mono-delirium appears, but it is rare.

During that phase it has been noticed that some patients take pleasure in telling stories, intriguing and deceiving people; otherwise they are not loquacious; but then the moral infirmity augments. There exist often hardness of heart, selfishness, and bad dispositions. From that state they become profoundly melancholic.

If the character of the disease still augments, immortality accompanies the propensity of doing harm or committing some atrocious crime. The patient is dull, and appears indifferent, though secretly he has a delight of preparing some evil action. When crimes are committed, their execution is particularly remarkable. When the patient is detected, or when he offers himself, he admits readily the facts, however scandalous or horrible they may be. Generally there is a complete absence of grief or remorse.

In all these cases, letters, memoirs, designs, etc., are of the greatest value to ascertain the mental condition of the writer. Their general feature shows cunning, complaints, and false statements.

Diastrephia may have a milder course, and present a remittent series of fits. Some take place several times in the day, or in the week. I have seen a patient who remained sometimes one whole year free from attacks. During their lucid intervals they offer no signs of insanity, except some disturbances in their general health; but in the attack patients say they suffer a great deal in the head.

Some patients, and especially dipsomaniacs, employ much art in preventing people from remonstrating. For instance, they will feel

offended—being gentlemen or gentlewomen—to be told that they were found dead drunk in some sewer of a street, etc. Their infirmity makes them powerless against a subsequent impulse, and they fall to the lowest scale of degradation. Some patients, after a fit, regret what they have done, and sometimes beg to be taken care of for the future.

No medical man denies to-day the solidarity of *innervation, sanguification* and *nutrition*, and there is certainly an intimate relation of these functions with those of the brain. For instance, any long process of enervation, produced by solitary habits, will soon operate a change in the mental organism, just as any deviation of nutrition will produce a morbid diathesis.

Who would maintain that a mental lesion can exist exclusively of any morbid reaction of the body? We have never met with such an exception. If it was so, diastrephic cases might remain the subject of interminable discussion between lawyers, philosophers and physicians. Our conviction on this subject may perhaps make us appear to overrate the value of physical symptoms; but we must declare that it is their coexistence with mental aberration that gives them the advantages upon which we insist.

Now what we say of diastrephia is applicable to cases of simulation of insanity. Let the part of a feigner be played as well as possible, emotions would be difficult to imitate; but somatical symptoms would be still more difficult or impossible to imitate. Supposing even that a simulator could impose upon a skillful observer, the result of his game would very probably be *real* insanity—a curious and forgotten form of insanity to which I shall afterwards refer. For the present I wish to state, that it is a direct proof of the power of ideas on our bodily structure.

Among the physical signs which I am going to mention, one of the most important is the existence of a morbid action on the brain. Pain is reported to exist in different parts of the head, and other bodily symptoms depend often upon a reaction of the nervous centres. They present various features, the *ensemble* of which strikes at first sight the practical observer.

According to the excellent observation of Dr. Billod, in the tenth volume of the *Annales Medico-Physiologiques*, there exists a curious interruption of volition in the muscular system. In spite of the patient his limbs cannot obey his purposes. It is just the opposite of convulsive muscular action which takes place in various diseases. The cerebro-spinal system is disordered, so are the functions of the sympathetic. Irregular innervation of arteries and veins produces latent disorders in various parts, of which patients rarely complain. There is an irregular visceral and capillary circulation which affects nutrition and several of its functions. Patients are emaciated, they feel a general heaviness over the whole body. Their complexion is sallow, their skin harsh, and its emanation has a peculiar smell. Very often they are feverish, the heat of the skin is increased, the pulse frequent, the tongue furred, and the bowels almost permanently confined. Their rest is troubled during

the night; they want to lie down often during the day. In cases connected with melancholy there is a deficient sensibility of the peripherical ramification of nerves sometimes producing anæsthesia. Generally an expression of pain is apparent. The physiognomy is dull, and suggestive of indifference and selfishness. The face is pallid; the stare is not vacant but uncertain. Sometimes the eyes wander about, or there exists a tremulous movement of both eyes when the patient fixes them on any one. Squinting has been remarked, but it is rare. Sometimes the pupils are irregularly contracted, which is a bad sign. When there is irritation of the brain the pupils are contracted. They are dilated in the congestive state, without irritation of that organ. The non-contraction of pupils indicates a loss of sensibility of the whole nervous system. Generally there is a peculiar look in diastrephia, indicating shrewdness and a disposition to do mischief. These signs are more apparent when fits are going to take place.

In this disease we have seldom seen a case without dyspepsia; there are gastralgic pains and a voracious appetite. Palpitation of the heart very often accompanies that disposition, and augments the sufferings of the patient. Complications may arise: thus uterine affections are the source of moral disturbances. Some arise from essential and local diseases, as gout and rheumatism.

Patients of a nervopathic disposition are often perfect hypochondriacs. Some, in spite of a suicidal propensity, are constantly occupied with their health and comfort. They ask continually for medicines, and are afraid of doing something wrong concerning some trifle, but, by a sudden impulse, they will commit suicide. When interrogated or asked why they committed certain deeds, some can give no reason or account for it; it was *an impulse, a desire*, etc. Some are very cunning in avoiding explanations.

We have seen a lunatic who wanted to be under the guard of somebody, even of a child, lest he should do some harm. That man, who had resided several years in the village of Gheel, in Belgium, was boarded in the family of a small farmer, and had never committed the slightest offense, although under the influence of diastrephia. I often visited him; he was sometimes alone, or under the guard of children—the parents being at work in the adjoining fields. Some people of his birthplace having told the burgomaster of his village that the patient was cured, since no insanity could bé found in his *talking*, a medical report was required, and, notwithstanding its conclusions, the administrative authority set him at liberty. He went home; but the man, let loose to his propensity to murder, killed his wife, in order, as he declared, to *cook her feet*, and, being disturbed in his horrible meal, he also killed an old man who had accidentally called at his house.

It is certainly remarkable that in the free-air system insane people, under the moral restraint of knowing that they are watched and observed, are less tempted to yield to morbid impulses than otherwise. In a population of a thousand free lunatics in a village,

the great number of moral insanity cases is quite sufficient to guarantee the practicability of the system.

Since authors have reported that lunatics experienced, in cases of fits, a sensation of burning, that, when it arrived at the head, caused a momentaneous fever. There is, and I must notice it, much affinity between diastrephia and epilepsy—they pass also into each other, as in the following case:

A young man had suffered eight years of epileptic fits. During two years the fire was within him, but instead he had fits of diastrephia. As soon as he felt the attack he used to cry, *Dear mother, be off, or I must kill you!*

Disastrephia, if cured in its early period, ends generally in dementia or general paralysis. This disease is frequent; but authors describe it under another denomination. For instance, all the cases died in the manual of Bucknill and Tuke, from p. 178 to 220, under the head of *Emotional Insanity*, are all, except a case of erotomania, pure diastrephic cases.

All the symptoms that we have enumerated are not seen at first sight; they require time and leisure to be detected. It is not to be expected that a physician, suddenly called into a court of justice, would be able to ascertain their presence in a first examination. Days, and sometimes months, may be necessary to investigate doubtful and difficult cases. The necessity of a fixed rule by which medical officers should be under the obligation to specify the moral and physiological signs of insanity in their affidavits is evident. The numberless difficulties arising from summary legal reports, and the dangers resulting from it to individual liberty and property, threaten every one.

In civil lawsuits concerning the suspension of civil rights, the validity of the public transactions of certain persons, the state of mind of persons having made wills and donations, etc., it is often necessary to examine certificates concerning past periods of the life of a person; but if these certificates or documents are defective or incomplete, on account of some general statement giving no details or description, they can be of no use. In criminal prosecutions it is sometimes necessary to know whether insanity existed at a certain time—its nature and its form—sometimes useful documents might be found concerning the parents and ancestors or adoptors of an accused party. One difficult point remains to be elucidated concerning incipient cases of diastrephia, or rather concerning the period of its prodroms. The question is this—When ought vice and immorality to be considered the proximate causes and motive of a reprehensible act? And when ought it to be considered as the result of a diseased brain? We would propose that, if pathological symptoms are not evident, if, at the same time, psychological signs are doubtful, on account of the identity of probable cause and of its results, no medical man should give his evidence in favor of insanity. And the reason is obvious. In a sort of intermediate state we have no right to decide the question.

In the course of this paper we have tried to keep clear of a confusion about the unsoundness of moral sense, widely different from that unsoundness of mind which is the result of a pathological condition of the brain. Physicians have no wish to impose ambiguities by which juries or public opinion should be bewildered. If they differ sometimes in opinion, it depends entirely upon the nature of doubtful cases.

On my arrival at Sing-Sing, I was kindly lent a book on the case of a late broker, Charles Huntington, and through the influence of a most distinguished and deserving physician, Dr. Fisher, residing there, was introduced to the convict in the State Prison.

While reading the case it appeared to me that either the subject had been a lunatic, afflicted with a special deficiency of moral sense, with great instinctive cunning and ability to deceive, or that he was a lunatic under the influence of some kind of diastrephia. After my visit to the prison I came to the conclusion that the prisoner was neither the one nor the other, although many facts showed that he had been in the process of becoming really insane.

After a few words were exchanged, the convict himself told me that in his opinion he had never been properly insane, though he had felt something wrong in his head until two years since. Up to that period he would have counterfeited any man's signature. He said his habit of forging had come to such a degree that to get *his own money* out of a bank he would have rather employed a forged paper!

Being, of course, a perfect stranger to all parties who appeared in this trial, the opinion I venture is free from prejudice and only liable to errors of my own.

It appears that in the State of New York, it is a jury that decides upon cases when the plea of insanity is brought forward. The law of the State, as explained in the case of Huntington, does not admit moral insanity as an excuse for responsibility. Partial insanity or monomania would not absolve the party unless it wholly deprived the patient of the power to distinguish right from wrong! We have already objected to such absurd worn-out jurisprudence—more perhaps than 600 years old—in England. But whatever the law may be, by another mistake the jury is omnipotent in scientific difficulties, because by its verdict the jury may either absolve without explanation or condemn without the slightest light on the scientific question. Now, I believe that the jury was accidentally right in finding Huntington guilty, although some doubts might have been entertained on his real state of mind.

In this point of the trial I am convinced of the good reasons brought forward by the two medical witnesses to establish their opinion. I do not partake entirely of it, but I acknowledge their sincerity and scientific ground. These physicians have, I may say, to the honor of our profession, shown their profound knowledge and aptitude to discuss difficult points on a medico-psychological specialty; but the whole of their discussion with clever jurists shows how

much physical symptoms were wanted to confirm their opinion. It is even curious to remark that their opponent's arguments were based on this very want of symptomatic evidence. However, the whole appearance of the case leads to the admission of a prodromic stage of diastrephia.

The conduct of Huntington from a boy up to the time of his trial bears the characteristic of some morbid diathesis and hereditary taint of insanity. His diseases, when a child, might have had a depressive influence on his conscience; and later, when a man, his temperament and propensities could hardly be checked by mixing with speculators in stock-jobbing. He lived alternately in wealth and poverty, extravagance and want. In prison he was found indifferent to his situation, although accused of a capital offence! His appreciation was certainly defective. Reading the case, one might ask whether he was not stimulating insanity? The prisoner maintained that he never intended injuring people! Still he found in forgeries the means of gathering enormous sums of money, of which he spent a great deal in self-gratification! Huntington said that it was a desire that came over him; that nothing could have prevented him from forging false paper, and that it was only two years since that he felt better, could sleep, and could say that he would not do it again.

The learned counsel for his defense explained the curious circumstance of the carelessness of his client, who had made no arrangements to escape or prevent his arrest.

Then the able advocate put several questions to the physician. 1st, Whether in their opinion, the defendant was sane or insane when the forgeries were committed? 2d, If insane, what was the nature and character of that insanity?

It was answered that it might be possible that all might take place as the result of almost unparalleled recklessness, but that from personal examination, and also from the testimony heard, it might be said that those actions were the actions of an insane man.

The answer appears unsatisfactory because it admits almost the possibility of recklessness, and does not point out the morbid nature of the acts. The testimonies on Huntington's conduct could not supply the wanted symptoms of an actual state of insanity. The mental state of the prisoner was the first and principal object of demonstration; his actions were naturally the consequence of his mental disposition.

Cross-examined by the advocate of the prosecution, one of the medical gentlemen was asked this question—

Upon what the prisoner said to you, and from what you judged from his appearance, would you pronounce him of unsound mind, from your examination and from his appearance?

The question is direct, and points the vital knot of the case. Besides, this question shuts all issues, by repeating that the source of information must be personal examination of the prisoner.

The answer was—not by his appearance, but from my examination of him I should.

Now by this answer physical symptoms were almost abandoned as of no value. However, the same physician said further, that the expression of the face of Huntington was not that of a villian but that of an insane man.

This general statement might have been good, if followed by a description which might have convinced the jury and court. Now, the advocate for the prosecution very adroitly asked the doctor to explain, what was the disease of his physical organization which prevented him from resisting the tendency to commit forgery? It was a quible; but the lawyer knew the weak side of the jury, and was certain of being victorious if he could prevent the physician from giving a satisfactory answer. The physician honestly said that he could not give the pathological anatomy of the case! The advocate insisted upon knowing the relation of a physical lesion of the brain to a moral perversity, and repeated the question, What urges the patient to forge paper? This insistance was very likely a necessity of the situation, because the learned lawyer would not have purposely laid a sort of trap for his respected and intimate friend, as he called the doctor in his exordium. I believe that such an unqualified question might have misled a less capable and learned physician to invent some new name of special disease having for its characteristic to *forge paper to the amount of half a million of dollars.* The question was ridiculous and improper, because it had nothing specially to do with the trial, as being a question on primary casualty in our moral nature, and a *modus operandi* of anatomy.

Another physician, also a learned professor in a medical school, explained with great accuracy why he did not believe in the existence of monomania. He thought that Huntington was insane because his intellectual and moral nature, as well as his propensities, were diseased. The honorable witness stated, that in this case no delusion nor hallucination existed, but only *moral insanity.* He said that Huntington in his moral obliquity, would, perhaps, in the West, have committed criminal acts attended by violence; but that having *satisfied himself* that Huntington was insane, he thought it unsafe to say or fortell what an insane person might be inclined to do.

I sincerely regret that this witness did not add objective proofs to his own convictions. Although the verdict was, I believe, a just and a right one, will it not appear injudicious that a jury of laymen should have to appreciate and judge a medical discussion, led by clever but artful gentlemen of the bar? With reference to the knot offered to the jury to untie, I imagine that the honorable jurors may have very well said among themselves that balancing the moral account of the broker, and finding him guilty, his state of mind had little to do with their decision.

I conclude this paper by the following propositions:

1. That the disease called moral insanity is but an affection of

the faculty of violation and instinct, attended by physiological symptoms.

2. That the name of moral insanity is defective, because it bears no relation to the cause, symptoms, and results of that disease; and that it misleads the opinion of the bar concerning crimes committed under its influence.

3. That the laws and rules concerning insanity, relating to civil and criminal cases, ought to be put in accordance with the actual state of medical science.

4. That no person ought to be considered as being insane if physical and mental signs cannot be traced and ascertained.

5. That a reform concerning medical certificates is necessary to insure regularity in obtaining from courts or judges orders to detain a person as insane. That no such document be admitted unless containing, 1st, All the moral and physical symptoms of the case; 2d, The diagnosis and prognosis of the disease.

Now, until a reform be made, we should have license to say to the legislators and jurists of this and other countries—*Si habetis corpus, nos habemus animam.—Medical Times.*

SING-SING, Oct. 1861.

Notes on some of the Chemical Reactions of Corrosive Sublimate.

By T. G. WORMLEY, M.D.

(From the London Chemical News.)

The solutions of corrosive sublimate used in the following experiments were made by dissolving the pure salt in water. A small drop of a saturated solution of the reagent was applied by means of a pipettee to a *grain measure* of the corrosive sublimate solution contained in a watch glass, or upon a glass slide.

The amount of corrosive sublimate operated upon will frequently be stated in the form of a fraction, it always being understood to imply the fractional part of a grain of the salt dissolved in one grain of water.

1. POTASH.

1. $\frac{1}{100}$th, grain of corrosive sublimate gives, with a small drop of a strong solution of potash, an immediate bright yellow amorphous precipitate, insoluble in excess. The precipitate is rather copious.

2. $\frac{1}{1000}$th, gives no immediate precipitate; after standing some little time there is a slight cloudiness.

2. AMMONIA.

1. $\frac{1}{100}$th, gives a good dirty white flocculent precipitate, insoluble in excess of the reagent. If the mercury solution be exposed to the vapor of ammonia it gives the same reaction.

2. $\frac{1}{1000}$th, a good bluish white amorphous precipitate.

3. $\frac{1}{2000}$th, gives a pretty good precipitate.

4. $\frac{1}{3000}$th, a quite satisfactory reaction, by either ammonia or the vapor.
5. $\frac{1}{10000}$th, gives a perceptible cloudiness.

3. Carbonate of Potash.

1. $\frac{1}{1000}$th, if a small quantity of the reagent is added to the mercury solution it gives a yellowish, or reddish yellow, precipitate; when an excess of reagent is used, the precipitate is of a brick red color.
2. $\frac{1}{3000}$th, only a slight cloudiness.

4. Iodide of Potassium.

1. $\frac{1}{1000}$th, gives an immediate bright scarlet amorphous precipitate, which is readily soluble in excess of the reagent, or the mercury solution.
2. $\frac{1}{3000}$th, a yellow-red precipitate.
3. $\frac{1}{10000}$th, gives a yellowish precipitate.
4. $\frac{1}{25000}$th, by using a very small quantity of reagent a pretty good and permanent yellow precipitate.
5. $\frac{1}{50000}$th, this quantity gave no satisfactory indication in a number of cases in which the least possible quantity of reagent was used.

The least visible quantity of corrosive sublimate in the solid state introduced into a solution of iodide of potassium becomes immediately yellow, changing to scarlet. When a solution of corrosive sublimate is evaporated to dryness, and the residue touched with a small drop of iodide of potassium solution :—

1. $\frac{1}{10000}$th grain, the deposit assumes a fine scarlet color.
2. $\frac{1}{10000}$th grain, much the same as 1.
3. $\frac{1}{20000}$th, the deposit assumes a distinct yellow color, and soon dissolves.

5. Ferrocyanide of Potassium.

1. $\frac{1}{1000}$th, a copious dirty white amorphous precipitate, soluble in excess.
2. $\frac{1}{10000}$th, a pretty good precipitate, readily soluble in excess.
3. $\frac{1}{25000}$th, difficult to obtain a slight trace.

6. Ferricyanide of Potassium.

1. $\frac{1}{10000}$th, a good greenish yellow amorphous precipitate, insoluble in excess.
2. $\frac{1}{10000}$th, much like 1.
3. $\frac{1}{25000}$th, quite a good greenish precipitate.
4. $\frac{1}{50000}$th, a just perceptible cloudiness.

7. Chromate of Potash.

1. $\frac{1}{10000}$th, immediately a rather good greenish yellow flocculent precipitate.
2. $\frac{1}{30000}$th, a distinct cloudiness.

Bichromate of potash gives no precipitate with a $\frac{1}{100}$th solution of corrosive sublimate.

8. Nitrate of Silver.

This test is for the purpose of detecting the chlorine of the corrosive sublimate.

1. $\frac{1}{100}$th, grain of corrosive sublimate gives a copious curdy white precipitate, which partly dissolves in excess of ammonia, and is soon replaced by a rather copious partly glanular precipitate.
2. $\frac{1}{1000}$th, a bluish white, soon changing to a white precipitate, soluble, with difficulty, in ammonia, but soon replaced by a dirty white partly granular precipitate.
3. $\frac{1}{1500}$th, a rather abundant bluish white precipitate, readily soluble in ammonia, and soon replaced as in 2.
4. $\frac{1}{2000}$th, a quite good precipitate.
5. $\frac{1}{2500}$th, a very satisfactory reaction.
6. $\frac{1}{5000}$th, a very perceptible opalescence, which, after a little time, becomes very distinct.
7. $\frac{1}{10000}$th, gives a just perceptible cloudiness.

The last mentioned quantity of corrosive sublimate would contain only $\frac{1}{32000}$th of a grain of chlorine. This result agrees closely with that obtained by the reagent with chlorine when in combination with ammonium, as given in Gmelin's *Handbook*, vol. ii. p. 355, in which a solution of sal-ammoniac containing one part of chlorine in 3,200,000 parts of water gave with nitrate of silver "a barely perceptible cloud."

9. Chloride of Tin.

1. $\frac{1}{100}$th, gives a light grey, then dark precipitate, which is rather copious.
2. $\frac{1}{1000}$th, much like 1.
3. $\frac{1}{3000}$th, a quite good deposit.
4. $\frac{1}{10000}$th, a prety fair indication.
5. $\frac{1}{20000}$th, gives a distinct reaction.

10. Hydrosulphuric Acid.

The solutions of corrosive sublimate were acidified with hydrochloric acid, and a stream of washed sulphuretted hydrogen passed into ten grains of the mercury solution.

1. $\frac{1}{100}$th, when the solution holds this proportion of its weight of corrosive sublimate, it gives an immediate brown, which soon changes to a dark brown, and ultimately to a copious black precipitate.
2. $\frac{1}{1000}$th, a yellow brown, brown, then rather copious black precipitate.
3. $\frac{1}{10000}$th, the solution immediately becomes brownish, then small brownish flakes, and, after a little time, a good brownish precipitate.

4. $\frac{1}{20000}$th, the solution immediately becomes yellowish, and, in a few minutes, very small brownish flakes appear, which after standing for sometime subside, and form a distinct deposit.

5. $\frac{1}{10000}$th, very soon the solution becomes turbid, and after standing some time a deposit is just perceptible; if viewed with a lens it is quite evident.

6. $\frac{1}{100000}$th, no indication after several hours.

11. Copper Test.

This test consists in introducing into the corrosive sublimate solution a small slip of clean copper foil, which will cause a decomposition of the mercury compound, with the deposition of metalic mercury upon the copper. The delicacy of the test is much improved by acidulating the mercury solution with hydrochloric acid, and also by heating the acidulated solution. In the following experiments a grain measure of the mercury solution was placed in a watch glass, and acidified with hydrochloric acid; the slip of copper being introduced into the solution, it was heated over a small flame of a spirit lamp.

1. $\frac{1}{10000}$th, grain of corrosive sublimate will impart to the copper an immediate silvery lustre, which soon becomes grey, and then dark grey; this reaction takes place equally well without the hydrochloric acid, or heat. The copper should not be less than about $\frac{1}{8} \times \frac{1}{12}$ inch, otherwise some of the mercury will become detached. After allowing the copper to remain in the solution for several minutes, it is to be removed and carefully washed with a small stream of water from a wash-bottle, or with water containing a little ammonia; it is then gently pressed between folds of filtering paper until perfectly dry. It is now placed in a small and perfectly clean and dry reduction tube; heat being applied to the closed end, the mercury will volatilise and condense a little distance above the point heated, in the form of a mist-like deposit, very readily discernible by the naked eye. If the sublimate be examined with a low power of the microscope, it will be seen to consist of innumerable spherical globules, which are opaque by transmitted light, and present a very bright silvery lustre under incident light. The tube should only be heated in the part which contains the copper; every time the mercury is volatilised it is attended with more or less loss.

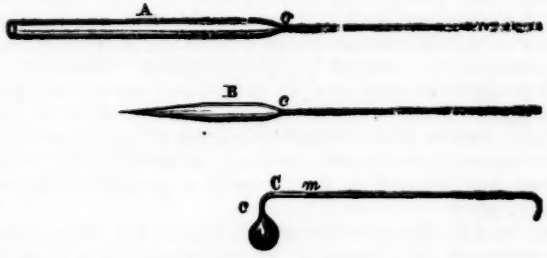
2. $\frac{1}{100000}$th, the copper immediately presents a silvery appearance, and in a little time becomes grey. This takes place about equally well without heat. Without either acid or heat, the deposit begins in a very little time; by heat alone, immediately. The copper when heated in a reduction tube gives a sublimate very perceptible to the naked eye.

3. $\frac{1}{200000}$th, when acidified and heated with a slip of copper of about $\frac{1}{16} \times \frac{1}{20}$ inch, the deposite is immediately perceptible, and very soon very satisfactory. Without either acid or heat the deposit takes place very slowly. If the copper be heated in a narrow tube, it gives a sublimate quite perceptible to the eye.

When deposits much smaller than the last given, are heated in an ordinary reduction tube the results are not uniform; depending upon the fact that the sublimate forms very small globules, which are distributed over a large space, and part of it seems to entirely escape the condensation within the tube.

Very uniform results may be obtained by taking a small clean tube of about $\frac{1}{10}$ inch in diameter, and drawing it out into a fine capillary point of from $\frac{1}{30}$ to $\frac{1}{10}$ inch in thickness. An exact impression of the tube used in the following experiment is given in the accompanying plate, fig. A.

The copper is introduced through the wider portion of the tube to the point *c*, and then heat applied to the outer end, and slowly brought to within a little distance of the copper; when the tube is soft it is drawn off as shown in fig. B. At the same time a second reduction tube can be formed. The neck of the tube is now moistened with water, or wrapt with wet cotton, and then the blow-pipe flame applied to the closed extremity, which is slowly fused into a bead, until the heat arrives at the copper, as shown in fig. C. The capillary end may now be fused shut. When wiped and examined with the microscope, the mercury deposit will be found at about the point *m*, forming a very narrow ring of well defined globules. These tubes may be reserved for future examination.



4. $\frac{1}{20}\frac{1}{000}$th, the acidulated solution may be heated several times in the watch glass, and as the fluid evaporates its place should be supplied with water. Care must be taken that the copper does not become dry. In a very little time the copper will present a silvery appearance, which soon changes to a very decided and satisfactory grey deposit. When heated in a tube it yields a sublimate perceptible to the eye, and which when examined with an amplification of about 75 diameters will be found to consist of a ring of well defined globules. In a number of cases over 100 globules, varying in size from $\frac{1}{7}\frac{1}{000}$ to $\frac{1}{10}\frac{1}{000}$ inch were counted, many of them being about $\frac{1}{2}\frac{1}{3}\frac{1}{3}\frac{1}{3}$ inch in diameter.

5. $\frac{1}{2}\frac{1}{0}\frac{1}{0}\frac{1}{0}$th, treated as stated in 4, the copper being $\frac{1}{20}\times\frac{1}{40}$ inch, will after some time impart a quite distinct lustre to the copper, which, when heated in a tube, will present under the microscope, a fine sublimate of globules much like 4.

6. $\frac{1}{10000}$th, the copper receives a decided metallic lustre or tint; when heated in a tube it always gives a very satisfactory result. In some few cases over 100 globules were perceived, several of which measured $\frac{1}{1150}$ inch, the greater number, however, were quite small. None less than $\frac{1}{10000}$ inch were counted. In a majority of cases about fifty well defined and satisfactory globules were counted, the most of which were in the field of a $\frac{2}{3}$ inch objective. So far as the evidence of mercury is concerned, this quantity of corrosive sublimate will furuish just as satisfactory results as $\frac{1}{1000}$ grain, the only difference being in quantity.

7. $\frac{1}{500000}$th, the copper shows but a slight change. When heated in a tube as many as twenty pretty good sized globules were counted, the largest of which measured $\frac{1}{3000}$ inch, the most of them, however, varied from $\frac{1}{3000}$ to $\frac{1}{10000}$ inch. In a majarity of cases only from five to ten globules measuring more than $\frac{1}{5000}$ inch were obtained. In this and the previous case many small points were observed, but they were too small to decide upon with certainty; in no case was any counted measuring less than $\frac{1}{10000}$ inch.

Amplification will assist somewhat in the determination of the mercury globules, but not so much as might be expected. When an amplification of 75 is used, a globule measuring $\frac{1}{3000}$ inch is perfectly satisfactory, such a globule, if a perfect sphere, would weigh $\frac{1}{1150000000}$ grain, when of $\frac{1}{5000}$ inch, they are small but distinct and satisfactory, such a globule would weigh $\frac{1}{650000000}$ grain. When of $\frac{1}{7000}$ inch, and associated with larger ones, they are still rather satisfactory; weight $\frac{1}{1150000000}$ grain. When of $\frac{1}{10000}$ inch they appear as mere opaque points, and are too small to be decided upon. When under an amplification of 250 or 300 a globule of $\frac{1}{7000}$ inch is very satisfactory; when of $\frac{1}{10000}$ inch it may be made out with considerable certainty, an amplification of 400 or 500 does not improve it much; such a globule would weigh $\frac{1}{3450000000}$ grain.

On account of the curvature and thickness of the glass tube, the higher powers of the microscope cannot be applied, a $\frac{1}{5}$ objective is about as high as can be used with satisfaction. When upon a flat surface, much smaller globules than any of the above can readily be seen; with a $\frac{1}{8}$ objective an "artificial star" measuring only $\frac{1}{23000}$ inch, will present the characters of sphericity and opacity, and will reflect incident light; but it must be remembered that foreign matter will sometimes present the same properties, or at least so much like the mercury globule as to make it unsafe to draw any decided conclusion. It would therefore seem that a globule less than $\frac{1}{8000}$ or $\frac{1}{10000}$ inch, could not be decided upon with certainty; the test however, is so extremely delicate, thut there is no need of torturing it even to this extreme.

It is not intended to imply that $\frac{1}{5000000000}$ grain of mercury can be *recovered* by this test, but only that that amount will give satisfactory evidence under the microscope when furnished by the test. The above experiments would seem to indicate that $\frac{1}{500000}$

grain of corrosive sublimate was about the least quantity that would furnish satisfactory evidence of the presence of mercury. There is a tendency on the part of some chemists to arrive at the conclusion that the amount of a substance that can be indicated by a test is the amount that can be recovered. This is a gross fallacy.

In the above cases it should be remembered that the amount of mercury present in the corrosive sublimate was as 100 is to 135.5.

Therefore $\frac{1}{500000}$ grain of corrosive sublimate would represent only $\frac{1}{677500}$ grain of metallic mercury.

Most tests are dependent in their reaction, not upon the absolute quantity of a substance present, but upon the degree of dilution. In the copper test for mercury, however, it is a matter of absolute quantity more than degree of dilution: for 1, 10 grains of a $\frac{1}{100000}$ solution of corrosive sublimate gives nearly as good reactions as 1 grain of a $\frac{1}{10000}$ solution; 2, 10 grains of a $\frac{1}{500000}$ solution, nearly the same as 1 grain of a $\frac{1}{50000}$ solution. It, however, requires a longer time for the deposition to take place.

The smallest visible quantity of corrosive sublimate when mixed with a small quantity of well calcined carbonate of soda, and heated in a small reduction tube, will give a copious sublimate of mercury globules.

12. Extraction of Corrosive Sublimate from Water by Chloroform and Ether.

1. If 1 grain of corrosive sublimate be dissolved in 100 grains of water, and then agitated for several minutes with an equal volume of chloroform, the chloroform will extract about .04 grains of the mercury compound.

2. Ether, under the same circumstances, will extract .67 grains of the corrosive sublimate.

Columbus, Ohio.

On the Treatment of Diarrhœa by Nitric Acid and Opium. By Dr. Patrick J. Hynes, Nottingham.

[Dr. Hynes recommends an old favorite remedy, which is sometimes forgotten, and we therefore think it well to let the reader see it again. He says:]

About ten years since, diarrhœa and dysentery prevailed rather extensively in this locality, and emboldened by the successful treatment of these diseases from the remedy I was in the habit of employing, I ventured to bring it, through the medium of the public journals, into notice, and since that time I have been repeatedly assured by many gentlemen who adopted it, that my opinion of its efficacy has been by no means exaggerated. I believe I am indebted to the work of Dr. Abercrombie "On Diseases of the Ab-

dominal Viscera," for the formula I am in the habit of employing; but as I write from memory, and have not an opportunity of confirming my opinion on this point by a direct reference to that excellent work, I do not wish to deprive any other author of whatever merit may be found to attach to its introduction as a remedy for those diseases.

I may observe that during the last four or five weeks diarrhœa has been very prevalent in this locality, and I do not overstate when I assert that I have used it in more than a hundred cases already, and always with almost instantaneous benefit. The formula that I generally employ is as follows: Compound infusion of gentian, eight ounces; tincture of opium, a drachm to a drachm and a half; nitric acid, twenty minims; one ounce to be taken after every liquid stool or painful alvine evacuation. A mustard plaster applied to the epigastrium, and drinking sparingly of ice-cold mint-tea, relieve the sickness and thirst that frequently accompany the severer form of these diseases. I have found the remedy equally beneficial in some rather intractable forms of dysentery. I would strongly urge upon gentlemen, who meet with dysenteric cases, to give it a trial, as I feel satisfied they will find it a very powerful curative agent in their hands.

In an old number of the "Medical and Physical Journal," from which several years since I made an extract, I find the following from a Mr. Hope of Chatham. He says:

"The first occasion of its use was remarkable. A young man, of sobriety and temperance, had suffered long with dysentery, and had been attended by a friend of mine for some time, who recommended those remedies that high authority and experience pointed out for relief; but finding no advantage, he sent for me, expecting more might be done. Nothing, however, recommended was successful, and, as I could but go over the same ground, no prospect of relief appeared; indeed his death was daily expected. At this time a woman who lived with him was attacked with dysentery, with extreme thirst. An acid occurred to me; but fearing it might produce unpleasant effects, opium was added:—Nitric acid, two drams; opium, two grains; water, two ounces; a spoonful to be taken in any vehicle three or four times daily. The effect produced was so great that my dying patient, unknown to me, begged to partake with her, and when I saw him next morning, which to my great surprise was with a cheerful countenance, he told me if ever I had a patient ill with his complaint, I should never fail to send the drops I had sent for the woman, for they had relieved his complaint at the first dose, and he was sure he should mend now, for they had saved his life this time. This was the only medicine he took, and in a few days he was able to walk about his room. In a third case I tried the acid without the opium, but it did not succeed. I then united them, and it effected immediate releif. I was still unwilling to persuade myself into the belief of its being a specific remedy, until a case of so extraordinary a nature occurred as to compel me to decide unequivocally in its favor. A young

lad, sixteen years of age, fell over a dredging-boat into the water in the month of July last. Indisposition succeeded, but to what degree I could not determine, as another practitioner was at first called in to his assistance. Finding no relief, they applied to me, requesting my attendance. This was near a month after the accident. The remedies I applied failed in their efficacy. His friends, despairing of relief, requested me not to trouble myself to attend him any more (they lived six miles from me), saying he must be left to his fate, being assured a day or two more would finish the scene. At this time I recommended the anodyne, and with great difficulty it was that they could be persuaded to give it a trial. Twenty-four hours had not elapsed before he began to find relief, so that in four hours he left off the remedy. The disease returned; reapplication of the drops again removed it, and in a very short space of time, without any other medicine intervening, he became as hearty as ever he had been. The manifest advantage of the medicine was recognized by the parents; nor did they spare unjust reflections that I did not employ it before."

I am unwilling to theorize upon the *methodus medendi* of what I believe to be the principal agent in the above formula; yet I cannot help thinking that the nitric acid possesses some disinfecting agency, no less than an astringent efficacy, over autumnal diseases. "The fumes of nitric acid are believed to be efficacious," says the late Dr. Montgomery, "in destroying the effluvia of typhus and other febrile diseases." Diluted with water, so as to form an acidulous drink, Dr. Duncan of Edinburgh used to employ it in the low fevers that prevailed in the suburbs of that town. But independent of its chemical action over animal effluvia, it appears to me to act as a direct astringent in all diseases of the mucous membrane. Thus in purulent ophthalmia, what remedy is so efficious as nitrate of silver in solution? In fact, in all mucous discharges it is almost the sole remedy upon which the surgeon depends; and of course the nitric acid is the chief agent in this valuable therapeutic. I am in the habit of employing a formula of a nearly similar kind as a topical application, but with double the amount of acid, in cynanche and diphtheria; and I can speak very strongly upon its beneficial effects. In broken-down constitutions impaired by mercury, by syphillis or other irregularities, the above remedy will be found frequently valuable; and given in combination with taraxacum, it will prove very servicable in sluggish conditions of the liver. I am in the habit of employing it with very considerable advantage in the diarrhœa of infants, and, combined with the muriated tincture of iron, in tabes mesenterica. I may further state that I have given the other acids, singly and in combination, the full benefit of a fair trial in all the above forms of disease; and, without any prepossession or prejudice, my experience enables me to give a decided preference to the claims of nitric acid in combination with opium, as a very superior therapeutic remedy. I have not had an opportunity of making trial of it in the very severe forms of epidemic cholera, although I have had formerly

ample opportunities of treating that disease. I have, however, many years ago, tried extensively, *inter alia*, the plan of treatment recommended by Dr. Toulmin of Brighton, thus anticipating his views (see the "Lancet" of August 17th), which certainly look well in print, particularly as they are eloquently, indeed elegantly, introduced; but when weighed in the balances they will be found wanting.—*Lancet, Aug.* 31, 1861, *p.* 204.

On Anasarca. By Dr. CHARLES WITT, Spring Gardens, London.

The following method of relieving that well-known result of internal disease—anasarca, may prove of interest to the profession. It is, to say the least, well worth a careful inquiry, whether something cannot be done, however temporarily, to effect the removal of the water, and thus to save our patients much of the alarm and annoyance of this addition to their sufferings.

Let me premise, that there appears to be nothing in anasarca partaking of the character of a curative effort of Nature, it is usually the consequence of a mechanical obstruction to the circulation, and experience has not yet shown whether there is any valid objection to such consequence. Medicines have been plentifully administered with this object, but, it is well known with no satisfactory results; and I venture to hope, therefore, that in the simple process here submitted means of relief will be found. By an easy and painless operation (founded on the structure of the tissue where the mischief lies) the whole of the serum can be quickly discharged. The way in which this may be accomplished will be best shown by detailing a case and its treatment:

A lady in Northamptonshire had long suffered from anasarca, the result of heart-disease. From the chest downwards the body was so much distended with fluid that for many months she had been unable to lie down, but was obliged to sit day and night on a chair. On account of her size and weight, every requisite movement was effected with difficulty; her breathing was short and labored: to be brief, her death was almost from hour to hour expected. At a consultation on the case, Dr. Robertson (consulting physician to the Northampton Infirmary), Mr. Dix (of Long Buckby), and myself being present, the following mode of relief was adopted in the utter hopelessness of any other:—Each leg was placed in a separate foot-bath, when a lancet was deeply inserted into the mass of cellular tissue, which projected most on the outer side of each ankle. A stream of water instantly began to flow from both apertures, and continued to do so with such volume and rapidity that in less than twelve hours the whole of it was removed, and the body and legs had assumed their natural size and form. Bandages of flannel were repeatedly applied as the dimin-

ishing size required, and were kept tight about the body as a precaution against faintness. The relief of the patient was immediate and gratifying, and for the first time for several months she laid down on her bed and slept comfortably. There was, of course, a slight oozing from the apertures; but these, being kept closed by adhesive plaster and bandages, readily healed—almost as soon, perhaps, as they would have done in a patient otherwise healthy. The operation was subsequently performed by Mr. Dix six or seven times during the remainder of the lifetime of this patient, which lasted about five months after the first administering of relief, and the water was never again allowed to accumulate so as to cause inconvenience.

I trust that a satisfactory proof is here given of what may be safely done, even in the advanced stage of anasarca; and I submit that the same treatment will prove efficacious in its earlier stages, by the removal of smaller accumlations of water, while the operation may be repeated as often as is required. Some faintness occurred after the first operation in the above case; indeed, the loss of a large quantity of fluid which has so long pressed on the blood-vessels must inevitably cause this tendency. Hence arises the necessity of keeping a bandage round the body; and it is necessary also that the patient should keep strictly quiet for some time.

As to erisypelas following this operation (the probability of which has been suggested by one or two of my medical friends) I am not of opinion that this is much to be feared. Let me add, that if patients afflicted with anasarca are to be left without artificial aid in the discharge of the serum collected—what follows? Nature attempts it, in a somewhat similar, but ineffectual manner; the distension goes on increasing, till at last the legs burst open by ulceration, and then only a partial escape of the fluid takes place; no real relief ensues, not to speak of the pain of so tedious a process. In the majority of cases, I believe that certain relief may be given, as well as life prolonged.—*Lancet, Oct.* 19, 1861, *p.* 370.

On Diphtheria. By WILLIAM BUDD, Senior Physician to the Bristol Royal Infirmary.

[It must be well known to our readers what a great variety of remedies have been suggested in this disease, each having its warm supporters.]

About two years ago, on the strong recommendation of my brother, Dr. G. Budd, I began to employ Beaufoy's solution of chlorinated soda, undiluted. Before that time, I had tried most of the preparations in vogue; but this one has seemed to me so superior to them all, that I have since abandoned every other in its favor. In my hands, it has appeared to have more than all the

advantages of the other remedies in common use, without any of their drawbacks.

In all the cases in which I have hitherto tried it—amounting now to fifteen—the local disease has begun to decline from the moment of its first application. An immediate subsidence of swelling in the lymphatics in the neighborhood of this disease, has, in particular, always followed its use—a fact from which the inference seems pretty clear, that this agent may do much to prevent that secondary poisoning of the system by the absorption of putrescent matters from the throat, which, in many cases, has the chief hand in giving a malignant turn to the malady.

On the other hand, its employment is attended by little or no pain: it causes no inflammation, and it leads to none of those breaches of surface which are inseparable from the repeated use of powerful escharotics, and which, when once produced, often make convalescence so painful and protracted.

Lastly—and this alone is a consideration of the highest importance—by exercising a local disinfection in the very focus of the diphtheritic virus, there is reason to suppose that this preparation greatly lessens the contagious power of the malady.

A full-bodied camel's-hair brush is the best instrument for applying it; and to insure its full efficacy, both as a curative and a sanitary agent, the throat should be thoroughly mopped with it as many as three or four times a day.

The general treatment adopted was, in all cases, in entire accordance with that now almost universally followed, in so far as this consists in a supporting plan, and a pretty liberal use of alcoholic liquors.

Diphtheria is the effect of a poison, whose chief characteristic it is to produce rapid septic changes; and to enable the body to resist these changes, an abundance of good nutriment, and a sufficiency of wine or spirit, are indispensable.

These are matters which, in this country at least, are so well understood, that I need not enter further into them. The only specialty to which I have to refer in connection with the medical treatment of the cases which form the subject of these remarks, was the administration of the tincture of sesqui-chloride of iron in considerable doses.—*British Medical Journal*, June 1, 1861, p. 575.

On the Treatment of Acute Dysentery by Ipecacuanha. By Dr. R. W. CUNNINGHAM, Assistant Surgeon to H. M. 4th Bengal Europeans.

[It is only lately that ipicacuanha has been used in large doses in tropical dysentery, though it has long been known and used as one of the best remedies in that disease. It was formerly given in comparatively small doses; now in doses of 3 i.—3 iss.]

On admission, a sinapism is applied to the epigastrium, and 30

minims of tincture of opium are given, for the purpose of rendering the stomach more tolerant of the remedy. An hour afterwards, one drachm to one drachm and a half, of ipecacuan is given in powder. Mr. Docker recommends it to be given half an hour after the tr. opii.; but, by waiting for a whole hour, the medicine is retained longer, and produces a more powerful effect. As may be supposed, considerable nausea is the result; but vomiting does not generally come on until at least an hour afterwards, sometimes two hours. During this nausea, copious perspiration is produced over the whole body; the pulse becomes more full and soft, and less frequent; the countenance loses the expression indicative of suffering, so marked in acute dysentery; tenesmus and abdominal pains immediately cease, and the patient has no more stools for 12, and sometimes for 24, hours. As soon as the nausea passes off, he expresses himself immeasurably relieved. The perspiration is kept up for a considerable time, and, of course, he feels languid and depressed for a little; but this has not, in any case that I have seen, proceeded so far as to call for any interference. When the patient next goes to stool, he does so without pain or tenesmus; the evacuations are fluid, and hold in suspension small masses of fæces, but are entirely free from blood or mucus. Sometimes the first dose is not sufficient, the dysenteric stools returning after a short interval; in which case a repetition of the dose will be required. Chicken broth and arrow-root are the only diet allowed. In most of the cases that I have met with nothing further has been required after the action of the ipecacuanha, than to keep the patient upon the above-mentioned diet for a few days, until the bowels recover their tone; or, if any tendency to debility manifested itself, a few doses of infusion of chiretta with nitro-muriatic acid have been sufficient to complete the cure.

The *rationale* of the action of ipecacuanha, thus administered, appears to me to be, that it produces the same relaxing effect upon the mucous membrane of the bowel that it does upon the system in general: a copious flow of the secretions of that membrane is produced, and an effect similar to that which we produce when we scarify an erysipelatous surface is the result—the membrane is relieved from the tension caused by the congestion and effusion of lymph, thereby preventing destruction of tissue and ulceration. The excreted fluids lubricate any scybalæ that may be retained in the saccules of the colon; and the general nausea overcomes the spasmodic action of the muscular coat, thereby enabling the scybalæ to be set free. But the action of the ipecacuan does not end here; enough is retained to produce a cathartic effect; or it may be that the whole mucous surface of the bowels has been induced to pour forth an increased secretion during the nausea; at all events the stools become copious, fluid, and fæculent. This catharsis continues for several days, thereby relieving any abdominal congestion that may exist, by causing a drain from the whole portal system; and it possesses this advantage over that produced

by most purgatives, that it is mild, free from irritation, and neither constipates nor debilitates the bowel after it has ceased.

Of the cases treated by me, or which I have had an opportunity of seeing, not one has had a relapse after leaving hospital; and, on looking to the old Registers, I find that cases similar to those I have seen were, under other systems of treatment, much longer in hospital, and also very liable to relapse. Army surgeons have this advantage, that all acute cases of illness must come under their observation in the very commencement; so that, in most cases of acute dysentery, the patient is under treatment while the disease is yet in its first stage, and no actual destruction of tissue has taken place. The means is therefore invaluable by which we can arrest the frightful disease in its infancy, before it has advanced to the stage of ulceration, rendering necessary a long and tedious course of treatment, and too often giving rise to serious complications in other organs than the one originally affected in simple acute dysentery. By overcoming the disease at the onset, we at once relieve the general abdominal plethora with which it is associated; and thus, though the small intestine, mesenteric glands, liver, and spleen, be at the same time in a state of active congestion, the action of ipecacuanha as above described, is not only efficient in removing the actual inflammation of the organ primarily affected, but is even more so in overcoming the congestion of other organs, so intimately related as these are with the principal seat of the disease.

Though my experience of this disease has been very limited, I think we may fairly assume, on these grounds, that the occurrence of hepatic and other complications will be far less frequent, and chronic dysentery much more rare, than under other systems of treatment which require a longer continuance of the remedies, and thus allow active congestion of important organs to ripen into actual inflammation.

I append the following case as illustrative of the previous remarks. It was acute and uncomplicated. The patient was six days in hospital; but, after two days, may be said to have been convalescent, as the only treatment consisted in a regulated diet, no medicine whatever having been given.

Pte. J. L., aged 28, a stout, healthy-looking man, was admitted on the 20th October, suffering from acute dysentery. Has been to stool twice at hospital within a few minutes, and says, that during the whole night he has been to stool every half hour. He has much tenesmus, intense heat and pain in the rectum, deep-seated pain and burning sensation in the left iliac region; skin hot and dry; pulse small and frequent, about 100; tongue slightly coated. The stools contain no fæculent matter, but consist entirely of mucus, with bright fluid blood.

℞. Tr. opii xxx. minims stat. sumend.

℞. Emplast. sinapi epigastrio applicand, et post horam.

℞. Pulv. rad. ipecacuanhæ, ʒ iss.

Diet.—Chicken broth, with ʒ i. of arrow-root added to one pint.

Vesp. The medicine was retained for a very short time. There is a little improvement in the stools, but they are still frequent, and attended by much tenesmus.

Repeat.—Medicamenta supra scripta.

21st. Has had no stool since he took the ipecacuan last night. Retained the dose for two hours. All abdominal pain and tenesmus have entirely passed off. Deep pressure in the left iliac region does not now give pain. Skin cool and moist; pulse more full and soft, 90.

Vesp. Has had no stool; says he is quite well.

22d. Has had a small stool this morning, fluid and fæculent, without any dysinteric appearances, and without pain or tenesmus.

Vesp. Has had a large fæculent stool, fluid.

23d. One stool this morning; becoming more solid. Continues quite well, and complains of not having enough to eat.

24th. Continues well; has had no stool since yesterday. To have mutton chop ʒ viii. in addition to the former diet.

Discharged on the 26th October, quite well; and now continues so on the 1st November.

This case affords a good example of the success of the ipecacuanha major plan of treatment. The failure of the first dose I attribute to its not having been retained sufficiently long, the nausea and other effects were consequently very transient, and insufficient to produce the desired result.—*Edinburgh Med. Journal*, July, 1861, p. 26.

On Uræmic Intoxication. By Dr. W. A. Hammond, Professor of Anatomy and Physiology in the University of Maryland.

Professor Hammond has a long article on this subject in the "American Journal of Medical Sciences" for January, 1861, in which he controverts the opinion of Frerichs, that uræmia is due to the conversion of urea into carbonate of ammonia, and ascribes the poisoning to direct action of the elements of the urine retained in the blood, upon the brain and nervous system; and among these elements, urea may be deemed the most poisonous. Frerichs performed two series of experiments upon which his theory is based: the first of which consisted in injecting into the veins of dogs, the kidneys of which had been previously removed, a solution containing from thirty-one to forty-six grains of urea. In a period varying from one and a quarter to eight hours, the animals became restless, vomiting and convulsions followed, ammonia was expelled with the expired air, and coma and death surpervened; after which ammonia was found in the blood, stomach, bile, and other secretions. In the second series, a solution of carbonate of ammonia was injected into the circulation, the kidneys remaining intact; convulsions occurred immediately, followed by coma, the expired

air meanwhile loaded with ammonia. As this ceased to be expired the animals slowly recovered. The author considers this no evidence that carbonate of ammonia was the cause of death, but on the contrary that ammonia may generally be detected in the respiration of healthy dogs, and is generally present in the blood of most animals, the truth of which he has satisfied himself of by repeated observation and experiment.

It is admitted that urea is a normal constituent of the blood in variable proportions; and it is only when the kidneys fail to eliminate in accordance to the requirements of the system, that the normal balance between the urea and blood is disturded. In support of his views, the author cites three series of experiments, the first of which was the injection of urea into the blood of sound, healthy animals. Large dogs were fed for three days on meat, during which time ammonia was constantly found in the breath, and urea in the blood. Upon injecting a solution of urea, symptoms of uræmia were soon apparent, of a severity in proportion to the amount injected. Upon a second examination of the blood, the urea had increased in quantity, while the ammonia remained about the same. "From the foregoing experiments it is perceived that there is a limit to the power of the system to eliminate urea, and that when this substance is introduced into the blood in large quantity, it causes death by uræmia."

The second series of experiments had reference to the effects following ligature of the renal vessels, or removal of the kidneys. For this purpose large dogs were selected, urea found in the blood, and ammonia in the breath before the operation. After removing the kidneys, or ligaturing the arteries, the amount of urea was increased threefold in a short time, and there was no evidence of any of it being converted into carbonate of ammonia. The animals died in periods varying from forty-nine to two hundred and seventy-eight hours. Congestion and inflammation of important organs were produced, as after injection of urea into the blood, or during the course of Bright's disease. It was also seen that "so long as vomiting and purging continued, there was no accumulation of urea in the blood, and consequently no uræmic intoxication."

In the third series, the kidneys were removed, and urea or urine was injected into the blood, which induced death with all the symptoms of uræmia, in from eight to fifteen hours; and when urine was injected into the circulation death occurred in a shorter time than when simple urea (though to a greater amount) was used in solution, whence it is inferred that urea is not the only poisonous element in urine. From his experiments and observations, Dr. Hammond arrives at the following conclusions:

1. The injection of urea, in limited quantity, into the blood of animals, produces a certain amount of disturbance in the nervous system, similar in its symptoms to the first stages of uræmia, but that this condition even disappears, if the kidneys are capable of so depurating the blood as to eliminate the toxic substance.

2. Urea, when introduced into the circulation in larger quantity

than can in a limited period be excreted by the kidneys, induces death by uræmia.

3. By ligature of the renal arteries, or removal of the kidneys, the elements of the urine being retained in the blood, render this fluid unsuitable to the requirements of the organism, and consequently induce a condition of system not essentially distinguishable from the uræmic intoxication of Bright's disease, or that caused by the direct introduction of urea into the blood. As, however, was pointed out by Bernard and Barreswil, so long as the urea, or the products of its metamorphosis, are discharged by the stomach or intestines, uræmia does not take place, but, that when these channels become closed, convulsions and coma are produced, and death soon follows.

4. The introduction of urea or urine into the circulation of animals, the kidneys of which have been ablated, shortens the life of such animals, as Frerichs and others have already shown.

5. There is reason to believe that the urine, as a whole, is more poisonous than a simple solution of urea, for, in those cases in which urine was injected into the blood, the amount of urea thus introduced was much smaller than that previously thrown in, in a pure state, and yet symptoms of as great intensity followed.

6. Urea, or the elements of the urine, as a whole, induce such a condition of the nervous system, as strongly to predispose to congestion and inflammation of the viscera, especially the lungs, pericardium and spleen.

7. Urea, when directly injected into the blood, or suffered to accumulate in this fluid by extirpation of the kidneys, deranges, in some manner, the process of sanguification, so as to disturb the normal relation of proportion existing between the white and the red corpuscles, and either to hasten the decomposition of these latter, or to interfere with the due removal from the blood of such as are broken down and effete.

8. There is no reason to suppose that, under the circumstances specified, urea undergoes conversion into carbonate of ammonia, but that, on the contrary, there is sufficient evidence to warrant the conclusion that no such process ensues. The fact that in the foregoing experiments a larger amount of urea is generally found in the blood taken from the body after death, than in that abstracted during life, is, of itself, conclusive against any such hypothesis.—*British Med. Journal, May* 25, 1861, *p.* 550.

On the Influence of Rest in the Treatment of Diseases of the Joints. By JOHN HILTON, Esq., F.R.S., Surgeon to Guy's Hospital, &c.

When a joint becomes inflamed, it is painful and difficult of movement; it becomes involuntarily fixed by Nature's own process, thus securing comparative rest to the interior of the joint.

Indeed, we may lay it down as an axiom, that Nature instinctively renders an inflamed joint comparatively fixed and flexed. Now, what is the key to the explanation of the flexed position and rigid state of an inflamed joint? Some might say, "Because the patient finds it the easiest position for himself, and the easiest position must, of course, be the best," But this is no answer to the question, How is this position induced? It is not voluntary. The patient cannot either prevent it or change it when it exists; nay more, it is not true that the flexed position is the easiest; for every day's experience declares the contrary, and I shall hope to have the opportunity of showing you distinctly that, when the hip-joint is diseased, it is flexed, and it is often in a very painful state; but that when the femur is put straight so that the flexed condition is destroyed, the patient from that time is free from pain. Here is an instance in direct contradiction of the idea that the flexed condition is the easiest for the patient. When the joint is made straight, the patient experiences, almost immediately, a diminution of pain. It is true, however, that in the case of the knee-joint it is sometimes otherwise; the reason for which I will endeavor to point out, through the medium of these diagrams, which represent the knee-joint in an extended, semi-flexed, and completely flexed position. It is plain that when the femur, tibia, and patella are in the position in which you here see them, the leg being in a state of extension, there must be a much larger extent of articular surface coaptation than in any other position of the joint; and this surface coaptation becomes more and more reduced, or less in extent, as the tibia is carried backwards away from the femur; and, probably, it is this diminution in the extent of the articular surface contact, as well as the diminished pressure, which explains the feeling of comfort that patients sometimes experience when the inflamed knee-joint is allowed to become flexed.

Still the question comes to us, Why is an inflamed joint fixed and flexed? It appears to me to result from the circumstances to which I shall allude presently more in detail—viz., that the irritated or inflamed condition of the interior of the joint (say the knee-joint), involving the whole of the *articular nerves*, excites a corresponding condition of irritation in the same nervous trunks which supply both sets of muscles, extensors, and flexors; but that the flexors, by virtue of their superior strength, compel the limb to obey *them*, and so force the joint into its *flexed condition*. The joint becomes rigid and flexed then, because the same nerves which supply the interior of the joint supply also the muscles which move the joint.

This anatomical arrangement, physiologically considered and rightly interpreted, may be made the means of explaining some of the most prominent symptoms of joint diseases, and of constituting a foundation for the required treatment of diseased joints by rest, which I propose to advance and to recommend.

In order to place this important anatomical, physiological, and pathological subject comprehensibly and definitely before you, I

will state it thus: "*The same trunks of nerves whose branches supply the groups of muscles moving a joint furnish also a distribution of nerves to the skin over the insertions of the same muscles; and—what at this moment more especially merits our attention—the interior of the joint receives its nerves from the same source;*"—thus implying an accurate and consentaneous physiological harmony in those various co-operating structures.

The large drawing which is placed before you was taken from a recent dissection, kindly accomplished for me by Mr. Durham, of Guy's Hospital, and depicted by an artist (Mr. Tupper) not now attached to Guy's School. You may see here the circumflex nerve branching into the teres minor and the deltoid muscles, distributing itself to the skin over the deltoid, and then proceeding to the skin over the fascia of the upper arm, to which the deltoid muscle is partly affixed. Yonder will be noticed the articular branch of the circumflex nerve, the branch which proceeds to the shoulder joint. Other nerves go to that joint, such as a branch from the subscapular trunk, which is derived from almost precisely the same part of the auxillary plexus as the circumflex nerve. So the suprascapular nerve, after supplying the supraspinatus and infraspinatus muscles, sends little filaments to the interior of the same joint. Thus the same circumflex nerve supplies these muscles, the joint which these muscles move, the skin over the muscles, as well as the skin over the fascia, which is a part of the insertion of the deltoid muscle. But here I touch upon a point, by which I am reminded to state that every fascia of the body has a muscle attached to it, and that every fascia throughout the body must be considered partly as the insertion of a muscle. I shall be able hereafter to trace nerves derived from the same trunk supplying the joint and muscle, sometimes distributed over a large extent of fascia. That extent of nerve distribution, however, I shall show to have a very exact relation to the proportionate attachment of the muscle to the fascia, of which I shall be able to adduce some well-marked examples.

The object of such a distribution of nerves to the muscular and articular structures of a joint in accurate associations, is to insure mechanical and physiological consent between the external muscular or moving force, and the vital endurance of the parts moved—namely, of the interior joints (whether it be of friction or of pressure); thus securing in health the true balance of force and friction until deterioration occurs. If this point of balance or adjustment be overreached during exertion, pain, Nature's warning prompter, is induced within the joint, and suggests the necessity of diminishing or arresting exertion. This cessation or this reduction of exercise, or friction and pressure upon the articular structures, *must be effected* by the muscular apparatus of the joint, either through the will, or immediately by its own instinctive efforts, called into play by means of the nervous association. The muscles, indeed, appear to be told, through the medium of the nerves of the interior

of the joint, that its articular structures are overtaxed; and, the antagonistic muscular forces of the joint being thus involuntarily excited, it (the joint) is at once rendered rigid and stiff, for the purpose of keeping it at rest. Or it may be put in this way (only as a confirmatory, however),—that the interior of the joint itself, under the influence of physiological exhaustion, contributes something towards the same end, by failing to secrete the proper quantity of synovial fluid. The joint thus robbed of its lubricating medium demands of the *exhausted muscles*, for its movement a still greater effort than in its normal state; and their inability to respond to the extra demand necessitates the quietude or rest of the joint. Still in this mode of viewing the subject, the necessity for limiting exertion in order that the interior of the joint may obtain the congenial rest requisite for the renewal of its physiological power and structural integrity, is intimated to the moving agents by the same nerve interpreters, and they (the moving agents), in obedience to the announcement, render the joint stiff and difficult of movement.

Without this muscular and articular nervous association in joints, there could be no intimation, by the internal parts, of their exhausted function; and there cannot be any doubt that it is when this period of functional exhaustion in the internal parts has been reached, and articular friction is nevertheless continued (notwithstanding the structural and functional prostration), that the mischief to the articular structures commences, and disease of the joints, as we term it, starts into existence.

Again, through the medium of this *muscular and cutaneous* nervous association, great security is given to the joint itself, by those muscles being made aware of the point of contact of any extraneous force. Their involuntary contraction instinctively makes the surrounding structures tense and rigid, and thus is brought about an improved defence against further temporary encroachments.

This same associated muscular and cutaneous nerve distribution is obviously of the highest importance in reference to the sense of touch, through a recognition induced by due pressure. In the absence of this peripheral, or cutaneous, and muscular harmony, through the medium of the common distribution of the same nerve, the refinements of the sense of touch could scarcely be acquired; for rude or heavy pressure is incompatible with minute and delicate appreciation by touch. So that if I touch anything with my forefinger, the impression made upon the sensitive nerve conveys to the associated motor nerve from the same trunk the precise extent of pressure which is necessary for the recognition of the required force. In prehension, or grasping with the hand, the indication as to the completion of the necessary force to be employed must be the impression made upon the sensitive branches of the same nerve which supplies the muscles employed in the act of prehension or grasping. Thus the median nerves, with others, are employed in grasping and in the adaptation of the fingers to the palm of the hand. The limit of that grasping is the perfect recognition of the

contact of the different parts of the hand to be pressed upon. Whether the body to be grasped be great or small, there must be an instinctive limit to the grasping effort. This can only be indicated to the muscular apparatus employed by the sensitive nerves. So that I say, in prehension, the indicator as to the completion of the necessary force to be employed must be the impression made upon the sensitive branches of the same nerve which supplies the muscles employed in the act of prehension or grasping.

So in standing, walking, or jumping. The contact of the skin of the foot with the ground intimates, in health, only the degree of muscular force necessary to sustain the erect posture in standing; to gauge the use of only the required energy in walking; and to moderate the concussion of jumping. Without this normal, consentaneous muscular and sensitive function, precision of action would be lost, and unmeasured exercise of muscular force would be employed during the performance of any of these functions. The nice adjustment of muscular power must be an important thing, for we know that unexpected muscular force breaks the patella.

Now let us go to the bedside. Is it not indisputable that if we allow an inflamed knee-joint to lie upon a soft pillow, unconstrained by mechanical means, the muscles of the joint, stimulated to undue exertion, never allow the articular surfaces to be kept quietly in apposition without pressure upon each other?—thus explaining the fixed condition of the joint. The flexion, too, receives its explanation from the exalted muscular vigor. Thus the flexors—as I before remarked, the more powerful muscles—act unceasingly day and night, apparently without any rest, and especially declare their mischievous assiduity by the wakeful slumbers and disturbed sleep of the patient. This persistent action of the flexors slowly alters the relation of the articular surfaces of the bones to each other—more slowly indeed, but not less surely than the hour-hand of that clock, which does not appear to move, but yet if I compare its present position with that which it occupied when I commenced this lecture, I discover that it has gone on marking the course of time.

Let us take the case of the knee-joint again. The surgeon sees the inflamed and swollen joint, lying on its outer side, and desires that it may be kept quiet upon the bed, or on a soft pillow. Whether he sees it again in a few hours or days, or in a week, the first thing that strikes him with regret, and perhaps surprise, is the changed position of the bones. He sees that the knee-joint is considerably more flexed than when he saw it last. On inquiry, he ascertains that neither the patient nor the nurse has disturbed it, and then he recognizes that the stealthy and mischievous flexors have secretly effected this change in position. If you give the patient chloroform, and destroy muscular action for a time, the joint is then perfectly moveable by ordinary manual force; so that it is not the mechanical distension of the *interior* of the joint by fluid, or the incumbrance of the joint by the fluid or solid results

of inflammation upon its *exterior*, which produces early rigidity or flexion; it is forced coaptation and flexion under the influence of muscular energy involuntarily exerted; for as soon as muscular contraction is destroyed by chloroform, the fixed and flexed conditions of the joint are for the time entirely lost. And here I may state, that over and over again I have seen the mischievous and destructive effect of this increasing state of flexion of the joint, and not seldom, I may say, resulting from procrastination, or inexcusable want of courage on the part of the surgeon to rectify it, or from his yielding too easily to the importunities of the patient or his friends, in order to avoid giving pain to the patient. From the time when the limb begins to be flexed starts the mischief, which by-and-by cannot be controlled.

It seems to me that a great mistake is made on the part of professional men, when they see an inflamed knee or other joint beginning to be contracted or flexed, not to correct it at once. I believe that their duty lies in preventing the increase of the flexion, and so averting the condition which, in some cases at all events, leads to the necessity for amputation.

This sole explanation of the cause of the fixed and flexed joints applies particularly to recently inflamed joints, before the deposition of new and comparatively solid material has taken place around and within the articulation, such as usually occurs in cases of long continued or chronic inflammation of joints, when, no doubt, the contraction and fixed condition depend partly on the incumbrance of the joints by the new material, and hence the deformity of the joint at that period cannot, even under the influence of chloroform, be entirely removed.

And here let me just refer again to this constantly flexed state of an inflamed joint. Take an inflamed hip-joint: I venture to say that no gentleman here ever saw an inflamed hip-joint with the leg extended. It is uniformly bent, and also, as a rule, slightly adducted, the cause of which I shall have occasion to refer to at another time. In the case of the knee-joint, when inflamed it is always flexed; but, curiously enough, the malingerer, willing to deceive and to impose, almost always endeavors to indicate his long continued and extreme suffering by fully extending the leg. But this extended position displays the imposition, for an inflamed joint is never straight, but always flexed, the degree of that flexed condition depending upon the intensity or the long duration of the mischief. Did any person ever see an inflamed ankle-joint, permitted to pursue its own course, remain nearly at a right angle with the foot? The heel is always raised by the gastrocnemii, and the toes pointed downwards. So with an inflamed elbow-joint; it is always flexed, never extended. But when we come to the wrist-joint, we find that although the muscular power associated with it is very great, yet in consequence of the extending and flexing forces being pretty equally balanced, we seldom have much flexion of the hand when the wrist-joint is inflamed. This is in

strict accordance with the law which I have endeavored to place before you—the quality of muscular force not causing much disturbance of the bones, but simply maintaining the joint in a quiet, but fixed condition. So again with the fingers. Who ever saw a finger with an inflamed joint of any duration in which the finger was perfectly straight? Such a thing was never seen; the inflamed joint is always more or less bent under the influence of the flexors. I think we may in the hand recognize the proportionate condition of flexion associated with diseased joints, in reference to a distribution of nerves, on which I shall have occasion to dwell at our next meeting. The forefinger, for example, when inflamed, is generally not so much flexed as the others, because it has an added muscle, the extensor indicis, which counteracts the tendency to become flexed. With regard to the thumb, I should say, as a rule, it is not proportionately so much flexed towards the palm when inflamed as the middle or ring finger. The explanation lies in this: that there is a greater balance of power in the muscles of the thumb, the flexors and extensors, as compared with the corresponding muscles of the fingers. This will explain the extreme flexed condition of some of the fingers, the slight degree of flexion of the forefinger, and the nearly straight condition, as frequently observed, in an inflamed joint of the thumb.—*Lancet*, July 20, 1861, p. 57.

On a New Operation for the Radical Cure of Hernia. By Prof. CHISHOLM, of South Carolina.

This operation by Prof. Chisholm, of South Carolina, is thus described by one of his pupils:—

"These and other considerations have induced Dr. Chisholm not to rest satisfied with the successes gained even by his modification of Wood's operation, but to add a still greater improvement, simplifying the entire procedure, and obviating nearly all the objections which have been, or may be urged to Wood's.

"The new operation is as follows: The scrotum having been invaginated upon the finger—as the only mode of guiding the needle in its passage—a long, strong curved needle, fixed firmly in a handle, and armed with silver wire, guided by the finger, transfixes the scrotum at the apex of the invaginated portion, passes through the internal column, and appears through the skin of the abdomen, when one end of the wire is drawn out. The point of the needle is then drawn backwards, and disappears again in the canal. Its direction is then changed. Whilst still embedded in the scrotum, and guided upon the finger, its point is made to traverse the external column of the ring, near Pouparts's ligament, lifting the skin of the abdomen. By gliding the skin upon the needle, the point appears through the small puncture made by the first passage of the needle, when the other end of the wire is seized, the needle is unarmed and withdrawn through the scrotum.

The finger is now removed from the canal, and the two ends of the wire being drawn upon the loop, it dissects the cellular tissue up to the columns, which it hugs closely. By twisting the ends of the wire the columns are felt approaching until they are brought into such close apposition as to allow nothing to pass between them, the spermatic cord in its exit filling up all the available space remaining of the ring. When the ring is felt closed, the twisted wire is drawn firmly outwards, and clipped off as close as possible to the skin, so that, when traction on the skin of the abdomen is removed, the gliding back of the integuments to their normal positions conceal completely the ends of the small loop of silver wire. The scrotum has already fallen back to its pendent position, and the only trace of an operation having been performed is in the two small punctures, one in the scrotum and the other in the abdomen which require a careful search to find them, and which will heal up in a few hours, hermetically incarcerating the silver wire.

"A moderate inflammation follows the operation, without much pain or swelling, and without any fear of suppuration. The wire is soon embedded in a lymphy deposit, which will not only close it, thus isolating it from the tissues, but, at the same time, agglutinates the columns together as an additional security to the success of the operation. The patient is kept quiet in bed four or five days, opium being given to insure rest and prevent action of the bowels. When the inflammatory stage has passed, a cathartic is administered, and the patient can quit his bed, resuming his occupation in a few days. The silver wire remains a permanent application. An essential element in the success of the operation is that the loop encircle the columns of the ring near their points of attachment to the pelvis. Otherwise, the columns cannot be approached, the ring remains open, and the results can only be negative. If this step of the operation be carefully followed, a radical cure can be nearly guaranteed."

The advantages of the operation are the short time the patient is detained in bed, the slight amount of inflammation produced, the dispensing with the use of a truss, and the security against relapse, consequent on muscular effort—the reliance being placed not on newly-formed adhesions, but on the silver wire. When the protrusion is large and the ring voluminous, several points of suture may be applied through the same punctures. The objection that the wire will always act as a foreign body is shown by experience to be unfounded, as it may remain harmlessly embedded in the tissues for any length of time. Four cases only have as yet been so operated upon, and that only since November, 1860.—*American Medical Times*, No. 5.

To the above we may append an account of a mode of operating found useful by Dr. Agnew, of the Philadelphia Hospital, and described in the North American Medico-Chirurgical Review (January, p. 117) in the following terms:—

"The instruments necessary for the operation consist, first, of two semi-cylinders of steel, 3 inches long and 1¼ inches in circumference, which can be separated from each other by a screw in the handle of the instrument, and on the internal face of the lower blade of which are two parallel, longitudinal grooves; secondly, of a spear-pointed needle, slightly curved at the extremity, and supported on a bone-handle; and, thirdly, of several stout needles of from 2 to 2½ inches in length.

"A portion of the scrotum is carried in, followed by the metal cylinder, and thrust up to the internal ring. The blades are now separated by means of the screw, and the long needle, armed with a thread of silver wire, is carried along one of the grooves to the upper end of the cylinder, and then made to pierce the exterior parietes of the inguinal canal. The thread is then removed from the needle, the latter withdrawn, and the other end of the wire passed through its eye, when it is passed along the other groove, and made to emerge a short distance from the first. It is again unthreaded, and after its removal the two ends of the wire are drawn up tightly and twisted over a small roll of lint. This effectually holds up the small plug of integument to the very summit of the canal, and as the silver thread manifests but little disposition to ulcerate out, it may be allowed to remain for a considerable time. The second and most important step of the operation consists in screwing the handles of the instrument completely together, (thus separating the blades in the canal to their greatest possible extent,) and then carrying across the canal, between the blades, four or five threads, at equal distances from each other. The first thread should be composed of silk, and be introduced as near the internal ring as possible. The remainder should be of silver, the last one being close to the external ring. These transverse threads can be lodged in the canal with great accuracy by this method, the cord being protected from injury by the posterior blade of the instrument. The latter being withdrawn, the patient is confined to his bed, the parts being protected by a compress and roller, and the wires should be removed as soon as the plastic exudation has bound the invaginated plug to the walls of the canal, which in the cases operated upon required twelve days."—*Medical Times and Gazette*, March 30, 1861, p. 339.

On Dislocations of the Shoulder-Joint. By Dr. N. R. SMITH, Professor of Surgery in the University of Maryland.

[Dr. Smith has for many years practiced the following method of reducing dislocated shoulder, and has found it to be most efficient.]

Extension, counter-extension, and manipulation, constitute the mechanism of the operation of reduction. Counter-extension is the mere fixing, or rendering firm and immovable, the scapula.

The head of the humerus alone requires to be relatively moved. The immobility of the scapula effected by counter extensions, is obviously of essential importance. All the movements of the head of the bone, effected in the effort to reduce the same, would merely drag or thrust the scapula loosely about, without changing the relative positions of the head and glenoid.

To effect the immobility of the scapula is the real difficulty in the reduction of this dislocation. In many of the methods practiced, the bands employed for this purpose oppose the return of the head of the bone to its place. By some a slit is made in a broad band of stout muslin, the arm carried through it, and one margin of the slit brought into the axilla and the other against the acromion. The tails of the band are carried, one across the breast, the other across the back, horizontally, and are secured to the wall. The lower margin of the slit supports effectually the lower portion of the scapula, but the support of the upper, which is by far the most important, is not well effected. The margin of the band cannot be expected to remain opposed to the thin edge of the acromion. It will either glide over the top of it, or fall beneath it into the depression caused by the dislocation. In the former case it will not support the scapula above, but will allow it to be drawn outward and downward. In the latter case it will, by occupying the cavity to which the head of the bone is to be returned, hinder the reduction.

In effecting counter-extension, it is undoubtedly, in most instances, expedient to apply our resisting bands as directly as possible to the bone from which the other is dislocated. But the difficulty in this case is to effect it without defeating the object in the manner indicated above.

On noticing the mechanical relations of the scapulæ, with their apparatus of muscles, to each other, it occurred to me to make counter-extension from the opposite wrist, an expedient directly at variance with the commonly received principle, because as remotely as possible from the bone to be supported. There are exceptions to most rules, and I shall endeavor to establish this as one.

Let us observe the continuity of ligament, bone, and tendon by which the two scapulæ are bound together and made mechanically dependent upon each other. Anteriorly the two acromion processes are bound together by an unyielding chain of bone and ligament. The two clavicles, the sternum, and the interclavicular ligament chiefly constitutes this bond of union. The fibrous-resistent ligaments in this chain are not capable of being stretched. If traction be made from opposite wrists, the two acromion processes, thus tied together, are not capable of being drawn asunder to the extent of half an inch.

Posteriorly the continuity of resisting parts is almost as perfect. The broad expansions of the scapulæ approach each other not remotely, and they are bound to each other by the interposition of the ligamentum nuchæ, and indirectly by muscles and tendons at

tached to the spine. Traction from the two extremities will not therefore separate the scapulæ to any considerable extent.

The superior angles of the scapulæ indirectly support each other through the medium of the cervical portion of the spine. The elovator muscles, arising from the superior angels of the scapulæ, pass upward to be inserted into the tranverse processes.

Now the object of counter-extension is to prevent the yielding of the scapulæ to the tractive force exerted upon the dislocated member. Nothing does this so effectually as the fixing of the opposite scapulæ by counter-extending from the wrist. Not only is the scapulæ thus sustained, but the spine erected and prevented from yielding to the tractive force, and becoming curved to the injured side, as invariably happens when counter-extension is chiefly made from the axilla, as is usual. Let the experiment be made by allowing a person to incurvate the spine laterally, and then making traction horizontally from the two wrists. The spine will be immediately erected and the two scapulæ will at once assume symmetrical positions. And so in dislocation, the symmetry of the two sides tends at once to be restored. The head and spine are elevated, the two scapulæ firmly sustained, and effect is given, both to the tractive force, and to the necessary manipulation.

In some of the first cases in which I employed this method, I directed simply traction from the two wrists, and I am not now confident that this is not the best method. I placed the patient in a chair and directed two strong persons to make steady horizontal traction from the two wrists. As soon as the spasmodic resistence of the muscle was overcome, the head of the bone was disengaged, and the muscles which help us in such cases, suddenly lifted the head into its place. It will be observed that this method causes no appreciable pain, but rather relieves the suffering of the patient caused by the pressure of the head of the humerus.

It is now some twenty years since I commenced the use of this method; I am not, therefore, premature in expressing my confidence in it, and recommending it to the profession.

In cases in which, from unusual muscular development, or the age of the dislocation, much resistance is expected, I have modified the application of the counter-extension thus:—

I place the patient in a chair, sitting a little on one side of it, so as to allow room on the side of the injury for the operator's foot. I then pass a piece of stout muslin, folded, around the chest and under the axilla of the injured side. The tails of it I carry horizontally to the opposite side, one in front, the other behind, and extending the arm horizontally, bandage them firmly to the wrist of the sound side, leaving the ends projecting, to be well secured to the wall, or other unyielding substance.

I then pass an ordinary roller over the top of the injured shoulder, and back and forth, twice under the muslin band, to prevent its slipping down. Then I continue the same roller under the bottom of the chair and over the shoulder, three or four times. This helps to give steadiness to the scapulæ, and especially to pre-

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vent the involuntary rising of the patient from the chair, or the tilting of the scapulæ upward, when it is necessary to make the manipulation of which I am to speak.

I now attach the extending band to the wrist of the injured side. I am aware that this is counter to the practice of many very eminent surgeons, especially Sir A. Cooper. My reasons are these: First, the wrist furnishes, as we may say, a very convenient handle to the arm. The band employed, if properly attached, does not slip, nor lacerate the integuments. In cases in which no great resistance is expected, it can be conveniently grasped by the hands only of one or two persons. In the next place, this method gives much more mechanical advantage in the way of leverage, in executing the final manipulations by which the head of the bone is thrown into place. It also removes the bands and hands of the assistants further from the patient's chest, and gives the surgeon more free access to the shoulder and more command of the arm.

The principal argument in favor of attaching the extending bands above the elbow is the relaxing, by this method, of the biceps muscle, which, by the complete extension of the forearm, is rendered tense. This disadvantage in my opinion is more than counterbalanced by the advantages mentioned above. The biceps is not capable of insuperable resistance; besides, a certain tension of its tendon, where bound to the head and neck of the bone, is favorable to the reduction, and it is partly the action of this muscle that finally, with a sudden shock, restores the bone to its place. Besides, when the bands are applied above the elbow, the forearm being at right angles, from the form of the arm, if any considerable traction is made, they will invariably slip over the elbow, make very painful pressure on the sensitive parts in the bend of the elbow, and not only cause great suffering, but extend the forearm and thus defeat the object in view, so that the advantage sought is lost, and many disadvantages encountered.

I first apply a wet roller to the wrist, and then attach a muslin band by the clove hitch. Next I direct the extension to be made by two persons, at first outward and a little downward, gradually raising the arm to the horizontal direction, and finally a little above it. The extension must be made gently and steadily, gradually increasing the force, so as not to provoke the musles to spasmodic resistance. As no pain is created by the force thus employed, it may be continued for a considerable time. The muscles, which at first resist, become fatigued and finally relaxed, and, in a large majority of instances of recent luxation, the head will slip into place without resort to any species of manipulation. I would even continue this traction, where much resistance is encountered, for a quarter of an hour before modifying the force; but, in case the object is not then effected, let the surgeon place his foot on the margin of the chair, and his knee in the axilla. Then let the assistants raise their line of traction above the horizontal as much as possible, and continue it for a moment. The surgeon should then direct that the arm be, by a sudden movement, carried down-

ward, while, by extending his foot, he elevates the knee in the axilla. He aids the assistants in this by grasping the arm near the elbow and using it as a lever. If the first effort is not successful, repeat it.

Sometimes I place on the knee a ball made by rolling up a bandage, but it is not important The surgeon can thrust his knee into the axilla so as to avoid much pressure on the marginal muscles of the axilla.

I generally direct those who make the traction to sway the limb horizontally backward and forward, and, grasping it with my hands, at times rotate it a little on its axis, thereby contributing to the disengagement of the head of the bone.

Where the consecutive displacement under the coracoid has occurred, the procedure is nearly the same, except that I make the traction a little more in the direction backward and upward, so as to disengage the head from under the process.

The dislocation upon the dorsum scapulæ, as I have before remarked, I have never seen but in three instances, and only one of those was a recent case justifying the attempt at reduction. It had been dislocated five days, and had resisted an attempt at reduction in the hands of others. The subject was a female, and I could obtain no very satisfactory account of the mechanical mode of the injury. It was easily recognized, there being a tumor beneath the spine of the scapula, as Sir A. Cooper describes, of the size of the hemisphere of a small orange, the limb being shortened and thrown forward. A depression existed under the anterior margin of the acromion. I failed to effect the reduction in the method usually recommended, and which I had deemed the best. I did not then practise extension from the opposite wrist. I made it by carrying the arm through a slit in the sheet. The extension was effected from the wrist, and when continued for some time, I sought to throw the head into place by manipulation—that is, I placed my knee against the back of the neck of the bone, and, swinging the arm backward, endeavored to prize the head into its place. I repeated the effort several times, but with no satisfactory result.

I then carried a band over the front of the shoulder, one tail under the axilla, the other above it. These I united, carried them backward and inward obliquely, and secured them to the wall. Then I made traction strongly from the wrist almost directly forward. Without much difficulty I thus drew the head of the bone forward over the margin of the glenoid, and had the satisfaction to see it slip into its place.

Much has been said of late of the sufficiency of *manipulation*, to the exclusion of extension, in the treatment of dislocations. By employing new terms, and ignoring the precepts of old surgeons, claims to originality have been set up. Although the term is modern, the method of manipulation has been practiced for centuries. It is, in my opinion, ridiculous to throw away the advantages derived from extension for the sake of magnifying the importance of a particular method of manipulation. Mothe, a long time ago, re-

duced the discolation of the shoulder into the axilla by placing the patient in a supine position, and carrying the arm outward and finally upward, parallel with the head and neck, making traction at the same time.

It is well known that a recent dislocation into the axilla, may sometimes be reduced by placing the knee in the axilla, one hand being placed on the shoulder, and the other using the humerus as a lever.

The supine position of the patient on a table is a very convenient arrangement in all dislocations of the shoulder, and is well calculated to promote the efficiency of the method which I recommend. I am not sure that it is not the very best, especially when chloroform is employed.

It will be observed, then, that I advise the combination of traction and manipulation. It would be as absurd to reject traction in all cases of dislocation, as it would be to attempt the reduction, by manipulation alone, of the fractured femur, where overlapping and shortening had occurred.—*American Journ. of Med. Science*, July, 1861, p. 20.

Complicated Case of Oblique Congenital Inguinal Hernia. By Dr. WILLIAM J. WILSON, Surgeon to the Clay-Cross Collieries, Derbyshire.

On the 16th of April, 1861, at two a. m., I was summoned by Dr. Houghton, the assistant-surgeon to the Clay-cross Works, to a patient suffering from strangulated oblique inguinal hernia, whom I found drunk, collapsed, pulseless, and vomiting, apparently in great pain, and very unruly. On examination, I discovered a firm, oval tumor, the size of a hen's egg, in the left groin, and considerable fulness along the course of the inguinal canal. I entertained doubts as to the character of the tumor, but the patient not being in a position to give me its history, and the bystanders knowing nothing more than "that it had been down once before, and had been put back without cutting," I did not feel justified in leaving my drunken patient with such a suspicious tumor in his groin.

Dr. Houghton at once administered chloroform, and it acted as a direct stimulant to the nervous system and to the heart's action, as, indeed, I believe it almost invariably does in collapse the result of injury. The patient having been brought fully under the influence of the chloroform, I applied the taxis, but without success, and then proceeded with the usual operation for the relief of oblique inguinal hernia. I found it necessary to divide some constrictions at the internal abdominal ring, after which a portion of the tumor was returned into the abdomen with an unmistakable gurgle. A tumor, however, still remained in the groin, between the scrotum and the external abdominal ring. I re-introduced my finger into the inguinal canal, and found only the spermatic cord,

and that the communication with the abdomen was quite patent. Now came the question—What is this tumor? Not an undescended testis, for there are two in the scrotum. Is it, then, a hydrocele of the cord? I applied the knife, divided a fibrous membrane, and then there exuded a number of fine, vermiform, yellowish filaments, each accompanied by a congested vein; and on squeezing the testicle (?) in the scrotum, these filaments and veins protruded all the more from the cut in the inguinal tumor. I now felt certain that I had cut into a portion of the testis, and believed that the inguinal tumor was the globus major of the epididymis, enlarged by disease, and that the vascular filaments were coni vasculosi. The gut being fairly returned, however, I felt only a temporary pang at having wounded the testis, and was content to labor for a few days under the imputation of having operated on a testicle in mistake for a hernia.

Eight hours subsequent to the operation I obtained the following history from the patient: He has always had *two* testicles in the scrotum, and has remarked that the left one (corresponding to the groin operated on) has always been a little smaller than the other. Never observed a tumor in his groin, except on one occasion, when "it came down" while he was lifting a weight. It was returned by my late assistant, Mr. Carter; and he had leeches applied to his abdomen, and took pills and medicine. On the present occasion, he remembers sneezing, then "feeling something give way in his groin," which caused such great pain that he fell to the ground. "Drunk and incapable," there he lay until found by his friends, at two a. m.

The history was simply that of a hernia of the gut. Had I then erred as to the tumor left in the groin? Had I left a lump of omentum there? I felt certain that I had not erred, and that my patient's history was not correct. Both Dr. Houghton and myself had passed our fingers into the abdomen; both had felt that the inguinal canal contained nothing but the spermatic cord; both has seen the spermatic ducts (?) ooze through the cut in the inguinal tumor when the testis (?) in the scrotum was squeezed; both of us had felt the tumor, and traced the spermatic cord passing into it. How could we be mistaken? The sequel will show how far we were correct in our diagnosis.

Nine P. M. Swelling and intense tenderness of the testicle (?) in the half of the scrotum corresponding to the groin operated upon; pain and tenderness along the inguinal canal and over the lower part of the abdomen; anxious expression; pulse 120, small, and wiry; great nausea and faintness; slight bilious vomiting; no action of the bowels. I diagnosed *orchitis*, consequent on the puncture of the portion of testis (?) in the groin; and peritonitis, the result of the strangulation of the bowel and of the operation; and I saw in this orchitis (?) a confirmation of my opinion as to the nature of the inguinal tumor. Ordered twenty leeches to the tender parts; calomel and opium every two hours; and the effervescing citrate of potash with prussic acid.

17th. The peritonitis has become more general, but the scrotal tenderness is much less marked. Ordered a repetition of twenty leeches, and to continue with the calomel and opium. Flatus has passed freely per rectum, but no stool. Vomiting continues, but the ejecta have not the slightest suspicious appearance or smell.

18th. Dr. Booth, of Chesterfield, kindly met me in consultation, and to him I stated every particular relative to the history, the operation, and the subsequent treatment of the case; the main points of my statement being, that a knuckle of intestine had been returned, completely and satisfactorily, but *no sac opened*, and I believe there was none; that the remaining inguinal tumor was *part of*, if not *the* testis; and that I had satisfied myself of this by opening it. I asked whether the symptoms called for any further operative interference? Dr. Booth replied that *the testicle was certainly in the scrotum;* but that he would not hold himself responsible for what was in the groin. Believing my statement as to the complete return of any abdominal protrusion that might have been present, he did not consider the existing symptoms more urgent than frequently occurred after the operation for hernia, and he should not advise an operation, but should rely on calomel and opium, fomentations, &c.

19th. Ten A. M.: Has passed a tolerable night, and is improved in every respect. The abdominal and scrotal tenderness has almost entirely disappeared; the wound in the groin is sloughy and painful. I administered a copious enema of warm water. It returned, in about half an hour, slightly discolored and smelling very offensively. Ten P. M.: Vomiting has been very urgent for the last two hours, and the ejecta have a fecal appearance.

20th. Vomiting decidedly fecal and very copious. Bowels not moved. Complains of great pain about the umbilicus and left groin. The patient insists that "there is an obstruction," and prays that it may be removed.

I now began to feel that a second operation was imperatively demanded, and that in all probability we should find a knuckle of intestine had again been forced into the inguinal canal (rendered unusually patent by the recent operation) during the act of vomiting, no pad having been applied in consequence of the tumor left in the groin.

21st. Two P. M.: In the presence of Dr. Booth, Dr. Houghton, Mr. G. O. Siddall, and two medical students, I turned up the flaps made at the previous operation, and exposed a tumor, of the size of an egg, thickly coated with recent lymph. After scraping off some of this lymph we found the tumor to consist of two distinct parts, the upper portion being a knuckle of inflamed intestine, and the lower the testis (?). The intestine was flaccid, and overlapped the upper portion of the other tumor. I enlarged the incisions made on the previous occasion, so as to expose the whole of the inguinal canal, and found that by simply breaking down the recent lymph which connected the bowel with the canal and the internal ring I could readily pass my finger into the abdomen. Observing

this, together with the flaccidity of the bowel, I felt that the hernia was *retained* in the canal by the inflammatory products rather than *strangulated at its neck*. Partly with my finger, partly with an edgeless knife, I broke through the remaining adhesions and then returned the bowel with the greatest facility. The gentlemen present now examined, with their fingers, the tumor left in the groin and the one in the scrotum, but without satisfying themselves as to which was really the testis. The prevailing opinion was that the *testis was in the scrotum*. Each tumor felt as though a "cord" passed into it. The examination was merely tactile, the inguinal canal having been ascertained to contain nothing but the spermatic cord, and the communication with the abdomen to be quite free. The vomiting and sense of "obstruction" were relieved by the operation; but the patient died thirty-six hours afterwards, in a state of collapse, no hiccough having occurred, and the bowels not having acted.

Autopsy.—I regret that a thorough post-mortem investigation was not permitted, and that I was compelled to pledge my word that none other than the parts previously operated on should be examined, and that these should not be removed from the body. Dr. Booth assisted at the examination. To the eye and to the touch there appeared to be three testicles, two in the scrotum and one retained in the left groin. The inguinal canal and groin were now laid open. The proper inguinal canal contained, apparently, merely the cord, and was lined with a layer of recent lymph. In the groin was a tumor coated with lymph, which lymph was found to conceal a thin layer of blood-vessels and (what looked like) nerves, connected by a very fine membrane. This layer passed into the scrotum. The tumor proved to be an undescended testis, with its epididymis and cord. So far, then, with the exception of this nervo-vascular (?) membrane, the relation of parts was such as would ordinarily exist in a case of congenital inguinal hernia prior to the descent of the testis into the scrotum, and prior to the occlusion of the processus vaginalis from the general peritoneal cavity. The testis and epididymis were quite healthy, and neither of them wounded. No doubt "the fibrous membrane" covering the testis, which I divided on the occasion of the first operation, was the peritoneum, or, to speak strictly, the processus vaginalis, thickened as a hernial sac becomes thickened when long exposed; and the filaments which I evacuated, and mistook for "coni vasculosi," were a portion of the nervo-vascular (?) membrane which I have alluded to. I explain the reason of my not exposing the testis thoroughly at either of the operations thus:—The incision through the skin was a long one (and subsequently enlarged by a shorter one made at an acute angle). The deeper incisions were confined to the *upper portion of the wound*, and the intestine was reached without opening any sac of which I was cognizant. This, of course, is usual in congenital hernia. Having returned the gut thoroughly, the testis felt (through the remaining undivided layers of tissue) like a distinct tumor, as indeed it was, and I did not feel justified

in doing more than making such a puncture or (if necessary) incision as should satisfy me as to its nature. I felt satisfied that the filaments which exuded on making this puncture were "coni vasculosi," and so made no further dissection. I was wrong, and no doubt my explanation may not be considered satisfactory. I rest satisfied with having done my duty to the best of my ability. It is impossible to place "old heads upon young shoulders" with any prospect of forming a successful combination. The testis was now removed from its position. Behind it we found a corrugated, crumpled-up, thick substance, coated with fibrine. The canal became contracted immediately below the testis, so as to form a neck, through which the substance just named passed, as also the film from the front surface of the testis. The finger could be passed through this contracted portion of the inguinal canal into the scrotum, and here the canal expanded into a globular cavity, which was filled with some membranous substance, which we presently examined. We laid open the scrotum, and exposed a glistening, oval, fibrous body, about the size, and having really somewhat the appearance, of a testicle. It had a neck too, which during life, and even on tactile examination after death, passed very well for a spermatic cord. We opened this curious body, and found it to be a strong fibrous envelope, about the eighth of an inch in thickness, lined with recent lymph, and containing a globular something, also coated with lymph. This indefinite something we found to be an undeveloped, highly vascular portion of omentum, crumpled up like a veil into a roundish mass, with a process or neck passing from it through the contracted portion of the capsule; the main portion then passing behind the testis, and becoming firmly attached to the spermatic cord and to the posterior wall of the inguinal canal, whilst a thin film passed in front of the testis, and contributed to form the "coni vasculosi," which I evacuated at my first operation. The fibrous envelope became much thinner at its neck, and gradually lost itself in the lining of the inguinal canal.

Remarks.—I take it that in this case the communication between the general peritoneal cavity and the processus vaginalis lining the inguinal canal and scrotum had never been closed; that a portion of omentum passed during fœtal life into this vaginal process prior to the descent of the testis; that the fibrous envelope consisted of peritoneum, fascia transversalis, and intercolumnal fascia, blended together and developed into a strong covering for the protection of the exposed portion of the peritoneal cavity and of the misplaced omentum; and that the testis remained in the groin, because its arrival in the scrotum had been anticipated and its place occupied by the protruded omentum. The canal of the processus vaginallis, when examined after death, was found to be contracted, first, at the internal abdominal ring; secondly, just above the testis; and, lastly, at the point where it formed the neck of the scrotal tumor. The contraction at the internal ring no doubt explains the reason why the hernia of the gut was not constant. I would again allude to the omentum. Is it possible that

the testis passed, during fœtal life, between the layers of the great omentum? It certainly was between them when we examined the body. The appearance, too, of this omentum was very deceptive and peculiar. The thin film in front of the testis (in the groin, looked just like a number of veins and nerves connected by fine fibro-cellular tissue, but coated on the external surface with soft) recent lymph. Posteriorly, this fine, vascular membrane was, as I have said, corrugated and crumpled up into a rounded substance about the size of the little finger, which expanded above and became firmly connected with the spermatic cord and the wall of the inguinal canal, and likewise expanded below so as to form the globular mass found within the fibrous capsule in the scrotum.

I must again express my regret that we were not allowed to open the abdomen; and I shall be most happy to afford information on any points connected with the case which my readers may think it worth while to inquire about.—*Lancet*, June 15, 1861, p. 583.

Bibliographical Notices and Reviews.

A Report of the Sanitary Commission to the Secretary of War.

This report has just been laid on our table. That the reader may understand something of the Commission, we will briefly allude to its organization. This took place in Washington on the 12th of June last. The Commission was invested with no legal authority beyond that of inquiry and advice in regard to the sanitary interests of the United States forces. It was directed to inquire into the principles and practices connected with the inspection of recruits and enlisted men; the sanitary condition of volunteers; to the means of preserving and restoring the health, and of securing the general comfort and efficiency of troops; to the proper provision of cooks, nurses and hospitals; and to other subjects of like nature. Purely auxiliary and advisory, the Commission was created solely to give its voluntary aid to the Medical Bureau.

Being a voluntary organization, the Commission has had to depend entirely on the liberality of the people to pay current expenses. It received from all sources up to the 25th of November last, twenty-eight thousand one hundred and seven dollars. Of

this sum the Life Insurance Companies of Massachusetts, New York and New Jersey contributed liberally. We give a list of

OFFICERS OF THE SANITARY COMMISSION.

President—The Rev. H. W. Bellows, D.D.; *Vice President*—Prof. A. D. Bache, L.L. D.; *Treasurer*—George T. Strong; *General Secretary*—Fred. Law Olmsted; *Associate Secretaries*—J. S. Newberry, M.D., J. Foster Jenkins, M.D., and J. H. Douglas, M.D.; *Assistant Secretary*—A. J. Bloor; *Actuary*—E. B. Elliott; *Accountant*—John Bowne.

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Associate Secretary—J. H. Douglas, M.D.; *Sanitary Inspector*—Prof. Henry A. Warriner, M.D.

Inspectors Engaged in Special Duty.—Fred'k N. Knapp, Henry B. Rogers, Robert Collyer, Thos. B. DeWalden, J. B. Clark and W. S. Wood.

The Commission has been at some pains to ferret out, as far as possible, the sources of disease and their character in different regions.

In the army on the Potomac the constant average number of sick per one thousand (1,000) men has been sixty-three (63); in the department of Western Virginia, one hundred and sixty-two (162); in the Valley of the Mississippi, one hundred and sixteen (116). The constant average number of sick, east and west, has been, during the months of August, September and October, seventy-seven (77) per thousand.

A table is given of the number of diseases and casualties of each class and order to 1,000 cases treated. We have no room for the table. It amounts to this:

Of every 1,000 cases of disease and casualty occurring in the army of the Potomac, 611 were of the class called zymotic, comprising endemic, epidemic, and contagious diseases. 571 of these zymotic diseases were of the miasmatic order.

"In the whole British army, in time of peace, 6.5 per cent. of the force otherwise available, is reported constantly "in hospital." Of the British army in the Peninsula under the Duke of Wellington, 1808–1814, 21 per cent. (or 9,300 of an average force of 44,500 men) was constantly "sick in hospital." The number of sick ranged from 9 to 33 per cent. of the whole force at different periods.

"These rates were exceeded in the British army of the Crimea. To maintain 100 effective soldiers in the field, it there became necessary to provide for 26.6 sick men. The annual rate of mortality was 3 per cent. by wounds, and 20 per cent. by disease.

"The annual rate of mortality in the British army, at home and in time of peace, was from 1.1 to 2 per cent. in the ten years preceding 1847.

"The average mortality of the army of the Potomac has been, during the summer, at the rate of 3½ per cent. (allowance being made for those who die after their discharge from causes connected with army life). Imperfect data received from the west indicate a considerably larger rate for the whole army; probably it will not be far from 5 per cent., if sweeping epidemics should be escaped.

"Mortality from *disease*, in the Royal Navy of Great Britain, is 40 per cent. greater in time of war than of peace; rising from an annual rate of 15 or 16 to one of 37 or 38 per 1,000 strength. The principal increase of the deaths in the navy, in time of war, is from disease; the amount of increase from casualties being commonly quite inconsiderable.

"The following statement exhibits a classification of the cases of disease in the volunteer army during a portion of the campaign, showing, also, the per centage of casualties of all kinds (wounds, accidents, etc.) for the same period, compared with like returns from the army of the Crimea, from April 10, 1854, to June 30, 1856:

	Army of the Potomac.	Army of the West.	Army of the Crimea, April 10th, 1854, to June 30th, 1856.
Zymotic Disease, (per cent.)	61.1	76.4	69.8
Constitutional, "	1.2	.6	.5
Local, "	30.7	17.3	15.6
Developmental, "	3.4	3.5	.1
Violence, "	3.6	2.2	14.0
All cases	100.0	100.0	100.0

"Two most important facts appear on the face of this table: first, the immense disproportion between cases of disease and of violence, fully justi-

fying all that has been asserted as to the loss an army in the field must expect to sustain from these causes respectively; and, secondly, the great excess of zymotic diseases, nearly all of which are, in a greater or less degree, preventible by proper precautions. For instance, typhus can be almost certainly averted by systematic attention to cleanliness and ventilation, small-pox by vaccination, and malarious diseases (intermittent fever, etc.) by quinine. It seems apparent, therefore, that it is within the power of Government by the action of the War Department to enforce rules that will diminish disease."

We do not exactly see the sanitary bearing of the following remarks:

"The opinion is often expressed by professional soldiers that an effectively disciplined army can never be made of volunteers, and that as undisciplined men can only be used in war in limited numbers, chiefly to preserve the fighting force from excessive fatigue, it is a waste of the public resources to keep a large volunteer force in the field. Many volunteers express, in effect, their acquiescence in this view, when they say, 'You cannot expect volunteers to be as particular as regulars'—an answer constantly given to the suggestions of the Inspectors, when they find a regiment the condition of which is in all respects disgraceful to its officers. To the consideration that this war is to be waged against volunteers, the reply of those who believe that only a large army of regulars can prosecute it to a successful end, is, that undisciplined forces are much better adapted for defensive than for offensive operations, and that volunteers can never be pushed to the heart of the rebellion, however they may hack at its extremities. This view is habitually sustained by those whose position entitles their judgment to be regarded with respect, and the question whether volunteers can be effectively disciplined thus becomes a serious one for the nation, and may be thought to give an importance to the information obtained by the Commission, aside from its sanitary bearing.

"Discipline is a habit of prompt and exact obedience under certain authority. Being a habit, it cannot be taken on, except by a more or less rapid process of acquirement. So long as progress is being made, a satisfactory state of discipline is not only to be thought yet possible of attainment, but it may be probable."

The Commission has exhibited a very considerable degree of industry in trying to see how far the disaster of Bull Run was due to the neglect or imperfect execution of sanitary measures. But it seems that those interrogated on the subject, and whose opportunities were best for knowing, expressed a great variety of opinions. It was attributed to hunger, fatigue, want of discipline in the troops, etc.

"Cause of Retreat.—The proximate cause of the retreat is variously

assigned—to the attack of fresh reserves of the enemy upon our right—to the rapid and apparently wild return of the caissons for ammunition—to the appearance of a retreat of our cavalry, who were thought by some to be riding over our own infantry, the rear guard, at the same time, mistaking them for secession cavalry, etc. Certain more organic causes of the defeat are frequently stated.

"By some the defeat is attributed to the condition of the men, exhusted by excessive fatigue, and by want of sufficient food, drink, and sleep; by others, to a 'feeling,' on the approach of the fresh reserves of the enemy, 'of the total inadequacy of a small force to compete with superior numbers supported by masked batteries.' By others the defeat is attributed to 'causes involving the whole command; not due to previous exposure and fatigue, but to the bad conduct of the battle on the part of the leaders.' By others (regulars) the defeat is attributed to 'inefficiency of volunteers;' by one (German) to 'bad strategy and want of discipline.'

"Through all the regiments there appears to have prevailed the false idea of the vast superiority in point of numbers possessed by the enemy, together with a lack of confidence in the military skill of the leaders of the army of the Union, as compared with that of the leaders on the part of the rebels; also combined to a certain extent with a dread of meeting an invisible foe.

"General Summary.—From these investigations, from official Reports of the Generals commanding, from published statements in rebel as well as loyal journals, from previous investigations of inspectors of the Sanitary Commission as to the condition of the troops, and from other sources, it is manifest that our army, previous to and at the time of the engagement, was suffering from want of sufficient, regularly-provided, and suitable food, from thirst, from want (in certain cases) of refreshing sleep, and from the exhausting effects of a long, hot, and rapid march, the more exhausting because of the diminution of vital force of the troops due to the causes above enumerated. They entered the field of battle with no pretence of any but the most elementary and imperfect military organization, and, in respect of discipline, little better than a mob, which does not know its leaders. The majority of the officers had, three months before, known nothing more of their duties than the privates whom they should have been able to lead, instruct, and protect. Nor had they, in many cases, in the meantime, been gaining materially, for they had been generally permitted, and many had been disposed, to spend much time away from their men, in indolence or frivolous amusement, or dissipation.

"It appears that many were much exhausted on reaching the field of battle, but that supported by the excitement of the occasion, they rallied fairly, and gradually drove the opposing forces from Sudley Spring to the lower ford, and from the lower ford to beyond the Stone bridge and the Warrenton road; that, at this time, (half-past three,) when congratulated by superior officers, and congratulating themselves on having achieved a victory, and when having repulsed reinforcements sent from the extreme

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right of the enemy to support their retreating columns, they were just relaxing their severely-tried energies, there appeared in the distance 'the residue' of the forces of General Johnston, (see McDowell's report, Dr. Nott's letter to a Mobile paper, and correspondence of Charleston Mercury,) a single brigade (Elsey's coming from the Manassas Gap Junction railroad, marching a double-quick to engage our troops at the right who had been hotly fighting unrelieved by reserves during the day. This brigade, joined with the two regiments of Kershaw and Cash, 'turned the tide of battle.' (See in Richmond Dispatch, July 29, statement 'of a distinguished officer who bore a conspicuous part on the field of battle on the 21st of July.')

"Our troops, ignorant of the fact that they had been contending against and repulsing the combined forces of Beauregard and Johnston; and believing that this inconsideral remnant of Johnston's forces which they now saw approaching to be his entire column; and feeling their inability, without rest or refreshment, to engage an additional force of fresh troops nearly equal in number to those with whom they had been contending during the day,—commenced a retreat, not very orderly, but quite as much so, at first, as had been the advance in which they had driven back the forces of the enemy. Their (nominal) leaders, who too often had followed them in battle, were, in many cases, not behind them on retreat.

"As they retired, however, a sense of disintegration began to pervade their ranks; each ceased to rely on his comrade for support, and this tendency was augmented by the upturned wagons blocking the road, which served to completely break the imperfect columns.

"The reports of the inspectors give no evidence that the panic infected the extreme left, or the reserves, to any sensible degree. It was uncontrollable only with a part of the troops on the extreme right, among whom it originated. Many at the center and the left were surprised when the order came to retreat, and for a time considered it as merely an order to change position in view of a still further general advance. Some officers state that they 'warmly remonstrated'—'too warmly, perhaps'—when they received the order to retire.

"The returns of the inspectors are not conclusive on this point; but from the result of subsequent specific inquiries by Mr. Elliott and the Secretary, it can be stated with confidence that indications of terror or great fear were seen in but a comparatively very small part of the retreating force. Most trudged along, blindly following (as men do in any mob) those before them, but with reluctance, and earnest and constant expressions of dissatisfaction and indignation, while no inconsiderable number retained, through all the length of the privation and discomfort of their dreary return to Washington, astonishing cheerfulness and good humor, and were often heard joking at their own misfortunes, and ridiculing the inefficiency of their officers. The Germans of the reserve were frequently singing. None of the reserves were in the slightest degree affected by the panic, and their general expression with reference to the retreat was one of wonder and curiosity.

"The reserve nevertheless, suffered much from fatigue, and subsequently exhibited most decided demoralization."

The American man is a compound of Anglo-Saxon, French, Spanish, Italian, Irish, German. His capacity as a warrior may be inferred from his origin, or from his own brief history, as he has demonstrated himself on several occasions. Testedby either he is courageous to the last degree. Not only courageous, but persistently so. But that such qualities are at once developed so as to be equal to every emergency, with reference to which he may be called upon to act, is quite another question. The acts of peace smother down and keep in abeyance many natural traits of character, and continued long they almost exercise an eradicating influence. Warlike capacity in an individual or in a nation, diminishes just in proportion as the requirements of social quiet life are cultivated. A nation at peace for a long time becomes effeminate loses its natural or physiological qualities. The process of making soldiers is simply the laying off of habit, instead of the putting it on, as has been supposed. Our army man in the field is undergoing the transition from citizen to soldier. The process involves heavy, and in many instances fatal draughts on vitality. Many fall by the way, simply for want of capacity for the change. With forces sufficiently strong for the ordinary duties of civil life, they nevertheless become an easy prey to the diseases that follow exhaustion, loss of rest, exposure, and anxiety of mind. In view of such facts the business of inspecting troops becomes one of the first importance to the welfare and efficiency of military enterprises. Merely looking at men by companies amounts to nothing. Every man who presents himself for the duties of a soldier should have his history investigated from childhood.

"A limited examination of the diseases of the army indicates that the largest proportion of those of typhoid type occur with regiments sleeping on rubber blankets, the least with those on straw or boughs; the largest proportion of catarrhal, with regiments on wooden floors, the least with those on the ground; the largest of rheumatism, with those on wood, the smallest with those on straw or boughs; the largest of malarial, with those on the ground, the least with those on straw or boughs.

"As had been presumed by the Commission, it has been proved that the best bed for soldiers in camp, can, with a little skill, be formed from fir or cedar spray, whenever it can be obtained in sufficient quantity. The Inspectors have from the outset been instructed to advise its use whenever practicable. It should be frequently removed and burned, after a thorough cleansing of the tent floor, the tents being struck for the purpose.

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"Experienced officers generally object to the board floors in tents. They are thought to be more damp than the ground itself and they offer an opportunity for the collection of rubbish and dirt, and make them difficult of removal."

We close our brief notice of this Report by bearing our testimony to the faithfulness concerned in getting it up. The facts developed by it are, many of them, important. Those that reflect unfavorably may be inseperable from the hasty organization of the army. Much may be excusable on this ground—still the inattention of such a large proportion of regiments to the plainest maxims of health, cannot fail to awaken the most anxious hopes, that the Commission may go on in the work it has undertaken. The Life Insurance Companies of the country understand the importance of the Commission so far as their interests are concerned, and hence their liberality in sustaining it. But such are the lowest of impulses that ought to favor its support. The spontaneous sense of sympathy will without doubt speak out requiring it to go on in its humane work.

In this connection we insert the following, from a paper read before the Sanitary Commission by E. Y. Robbins, Esq., of Cincinnati:

"The Mortality Among our Troops—How to Decrease It.—In the late report of the Secretary of the Sanitary Commission, the mortality in our army up to December is estimated at 5 per cent, or 50 in 1,000 men. Is this a high or a low death rate? Vital statistics show that in civil life the mortality among young men of the age of our volunteers is not more than about 7 in 1,000 annually; so that our soldiers, dying at the rate of 5 per cent, or 50 out of 1,000, die fully seven times as fast as they should die, or seven times as fast as they would have died if they had remained in their former occupations. Supposing our army to consist of 600,000; there would at this rate perish by disease during twelve months not less than 30,000, or fully 26,000 more than should die. Unquestionably the winter and spring months will show a still larger rate of mortality. What is the cause of this? Is it the food they eat? Doubtless, to some extent. Fat pork is not the most sanitary food, nor several other articles consumed in the army. Is it sleeping upon the bare ground? Doubtless, to a considerable extent. This has been asserted to be the chief cause. But the statistics of the above mentioned report show that this is an error: the sickness in regiments sleeping on the ground being, on the average, less than 20 per cent. greater than among those who sleep on board floors, whereas the extra mortality in the army above that, among young men of like ages in civil life, is fully 700 per cent. This, then, will

account for only 1-35th part of the excessive mortality in the army. Is it want of sufficient blankets and other clothing to keep them warm? Doubtless, again, to some extent, though how far it is difficult to determine. Is it the malarious influences of the atmosphere and the soil of the country where camps are situated? These localities would certainly not be likely to be chosen, worse in this respect than the average of country districts, and statistics show that the death rate in the country is much less than in the cities. We are too apt to throw the blame of our diseases and sufferings upon nature, rather than upon our own ignorance and folly.

"When the British troops in the Crimea were dying at a higher rate than the inhabitants of London died during the great plague, many people talked wisely about the deadly air, and the winds of the Black Sea and the Bosphorus. But events proved that it was not the air that was doing the mischief, but the want of it. The commissioners to the British army, as well as the highest medical officers of the French army declare that the chief cause of the great mortality in those armies was the crowding and want of ventilation in tents and hospitals. The chief remedies that checked the ravages of disease in the British army were increased ventilation and cleanliness, and the enlarging of hospital accommodations so that the sick could be scattered and have more room and air space. As the result of these and other improvements, the British army in the Crimea became healthier than the troops at home, the mortality being reduced to about ten in one thousand, annually, which is only about one-fifth the mortality among our own troops. In the French army, no such sanitary reform took place, and the health of the army grew worse to the end, though they were encamped on the same field, with similar conditions of service and atmospheric influence, and the Government hastened to negotiate a peace, less the army should be conquered, not by the Russians, but by disease.

"Now what is the condition of our own troops in regard to air, space and ventilation in tents and hospitals? They have only seven or eight tents usually to a company, so that twelve or fifteen are crowded into a space not large enough for five, or indeed for three persons to sleep healthily. In these tents each person has less cubic space often than had the wretched persons in the black hole of Culcutta. In our barracks, also, they have usually only about one-sixth part as much air space as the experience of European armies has proved to be necessary to the health of soldiers.

"And yet every means of ventilation is usually shut up at night for the purpose of excluding the cold. The sick are crowded into our hospitals four or six times as densely as is permitted in the hospitals of England.

"We talk about food; but air is the dish we must feed upon each minute. And yet we eat of this dish, and then throw the poisonous and filthy products of the digestion of it back into the general stock of provisions—the reservoir of air in the room—to be again taken into the system. And all this because the air is invisible, and because we cannot see these poi-

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sonous and filthy products of respiration and perspiration. We talk about cleanliness, and it is well; and while we keep our clothes and floors clean, yet in regard to the air we practice the utmost degree of filthiness; those exhalations from the lungs and skin being as truly excrementitious, in their nature and being as filthy and poisonous as the matter discharged by any of the other excrementory organs of the body. We are conscious, though perhaps not sufficiently so, of the ill effects, and the filthiness of breathing the exhalations of cesspools and other receptacles of filth; and yet the most distinguished writer on physiology in the English language remarks that the prutrescent exhalations from the living human body, in crowded and unventilated rooms, resemble very closely in their nature the effluvia arising from privy vaults, swine slaughter houses, and manure factories, and that they are at least as efficacious in generating disease. How then could we expect that our soldiers should be healthy, crowded together as they are in tents and hospitals and without any sufficient ventilation.

"Men cannot support health and strength on such a scanty supply of air and of such a quality, any more than they can maintain health and strength on half rations of food, or on food that is damaged or adulterated.

"And what is the remedy? Give them more room and as much ventilation as practicable, supply more tents and increase the hospital accommodations. This will cost something. But boards and canvas are cheaper than human constitutions and human lives. Every man that dies in the army now is a pecuniary loss to the Government of perhaps two or three hundred dollars. Moreover, to maintain an army of 600,000 efficient men the Government must now support 650,000, that is the well part of the army must be burthened with 50,000 sick. Which, then, would be the cheapest, setting aside the suffering and sorrow consequent upon sickness and death—which would be the cheapest, to furnish additional accommodations or to support all this loss and encumbrance. Whether it is cheaper to have an army of well men or an army of sick ones; 300,000 men brought up to such a state of health, activity, strength and endurance as by proper training and sanitary appliances they might be brought to, would be as efficient as 600,000 such as we now have, and yet only cost the Government half as much.

"Again, our method of warming hospitals and tents needs to be entirely changed. Stoves are an abomination and should never be used. This is the verdict of all, both in Europe and this country, who understand the principles of Sanitary science."

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The Principles and Practice of Obstetrics. By GUNNING S. BEDFORD, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the University of New York. Author of Clinical Lectures on Diseases of Women and Children. Illustrated by four colored Lithographic plates, and ninety-nine Wood engravings. New York, S. S. & Wm. Wood, 389, Broadway. 1861.

This purports to be a systematic treatise arranged with reference to the wants of students, to whom it is dedicated; and it is so well up to the times as to be a very nice thing for the practitioner. Throughout the work the author seems to have aimed at conservative midwifery. Extreme views have been eschewed, and there has been an endeavor to inculcate upon the accoucheur a due reverence for the resources of nature.

There are some questions in midwifery in regard to which there is still some diversity of opinion.

Among these is the one relating to *Embryotomy.* This is one of the highest questions in obstetrical science. In it much is involved relating to all parties, mother, child, and practitioner. The author treats it in a way that is very careful. Of course the only justification that can be alleged for the operation, is such a disposition between the maternal organs and fœtus as to render it physically impossible that the latter can be made to pass either through the natural effort by the aid of the forceps, or version, supposing the woman to have arrived at the full period of gestation. Should the antero-posterior diameter be less than 2 to 2⅛ inches the author regards the operation as unsafe to the mother unless the child is dead and more or less decomposition has taken place. Again, a general principle is, that a living child cannot be delivered with a pelvic diameter under 3⅛ inches. Under such circumstances the author resorts to the Cæsarian section.

"My own action under these circumstances would be a preference for the Cæsarian section over the mutilation of the child. I believe an early resort to the Cæsarian section would, with the aid of anæsthesia, diminish its dangers in contrast with embryotomy as absolutely to render it of the two expedients but little more fatal to the mother, while instead of the necessary destruction of all the children a very large portion of them might be saved, for you are not to forget that under the most favorable circumstances only one in every 3⅛ of the children is lost in the Cæsarian operation."

The *corpus luteum* of the ovary was at one time supposed to be

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an evidence of positive previous gestation, and the number of these bodies it was also supposed represented the precise number of children borne by the parent. These opinions have been given up, and the following may be regarded as the points most entitled to confidence.

"1. A corpus luteum in its earliest stage (that is a large vesicle filled with coagulated blood having a ruptured orifice, and a thin layer of yellow matter in its walls) affords no proof of impregnation having taken place. 2. From the presence of a corpus luteum the opening of which is closed and the cavity reduced or obliterated only a stellate cicatrix remaining, also no conclusion as to pregnancy having existed, or fecundation having occurred can be drawn, if the corpus luteum, be of small size not containing as much yellow substance as would form a mass the size of a pea. 3. A similar corpus luteum of larger size than a common pea, would be strong presumptive evidence, not only of impregnation having taken place but of pregnancy having existed during several weeks at least, and the evidence would approximate, more and more to complete proof, in proportion as the size of the corpus luteum was greater."—*Muller's Physiology.*

As there are two classes of *corpus lutea*, one the result of menstruation, the other the result of impregnation, it becomes a matter of some importance to distinguish them. Prof J. C. Dalton, has perhaps given the profession the most able paper on the diagnosis.

"The corpus luteum of pregnancy arrives more slowly at its maximum of development, and afterwards remains for a long time as a noticable tumor, instead of undergoing rapid atrophy. It retains a globular or only slightly flattened form, and gives to the touch a sense of solidity and resistance. It has a more advanced organization than the other kind, and its convoluted wall is much thicker. Its color is not of so decided a yellow, but of a more dusky hue, and if the period of pregnancy is far advanced it is not found like the other in company with unruptured vesicles in actual process of development."—*Transactions of American Association*, 1851.

We have stated that this work is very well up to the times and that it is arranged so as to suit the student and accoucheur equally well. We notice, however, some peculiarities that pertain to the author. These are very obvious everywhere, but most so in the portions of the work that are controversial.

Report of the Central Ohio Lunatic Asylum for 1861.

This report has been on our table for some time, but until now we have had no leisure to look through it.

The annual reports of our Benevolent Institution, must always be a source of interest to the public and to the medical profession. In the one before us we notice but little for special consideration. The Trustees regard the Institution as being in a prosperous condition, and from the report of the Superintendent the curative department is also prosperous.

Table one shows the daily average of patients, during the year, to be two hundred and sixty-two (262). It also shows the percentage of recoveries during the year to be 63.31.

The statistics of the Institution, from its organization until the present, are also given, in which it appears that the *average* percentage of recoveries (based on admissions), for a period of twenty-three years, is 51.85. We also find that the average percentage of recoveries, during the last four years, the period that the present Superintendent has had charge, is a little more than 57. These figures are striking. They show that Dr. Hills, the present Superintendent cures annually 12 per cent. more of his cases, than are cured in the oldest and best regulated institutions of Europe. How is that? How?

In commenting on the Causes of Insanity, the Superintendent embraces the occasion to ventilate some of his animosity towards that old "evil genius," Alcohol. Now, we have not the least misgiving about alcohol occasioning directly and indirectly a good deal of trouble. But it should have justice done to it in the premises. We should recollect that it is a very convenient scapegoat; one nearly always present in the patient or his progenitors.

Physiologists are not exactly agreed on the effects of alcohol. They are also getting further and further from old opinions. It seems pretty reasonable that alcohol stimulates and strengthens the nutritive function. Quite a proportion of practitioners entitled to respect bear such testimony. Its value in the treatment of phthisis is supposed to be explicable upon its sustaining properties. We have no evidence that, taken in stimulating quantities, it would be more likely to rupture the fibres or cells of the brain than a fit of passion of any kind. The abuse of alcohol, like the abuse of articles that enter with the food and make up a part and

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parcel of the organism, often becomes a source of disease and may destroy life. Such a fact, however, no one, not demented, would lay stress on.

Insanity is looked upon as involving primarily the cerebrum because this portion of the encephalon is the seat of Reason. Alcohol only affects this part of the brain, when its influence is felt at all in the organ, incidentally. Its greatest impression is on the cerebellum, the "coordinating" organ.

In seeking then, for the causes of insanity, so rife in our land, it might be suggested to the chevaliers who have been "shivering Quixotic lances" at the old alcoholic ghost, to hold up a little.

The truth is we are being bluffed off of our old favorite hobbies. The most trustworthy researches into the condition of humanity throughout the world with reference to insanity, establish the melancholy fact that it increases in a direct ratio with the progress of civilization. Barbarous nations have little or none of it, though they all use stimulating and intoxicating drinks; while nations engaged in building up the higher orders of civilization suffer most.

We must look then into the nature of our civilization for the causes of insanity. Would it not therefore, be well for the chevaliers to begin this inquiry by seeing how much is due to the premature and excessive training that obtains in our schools and colleges. With this as a base line for operations something nice may turn up.

Editorial and Miscellaneous.

COMMENCEMENT.—The Commencement exercises of Starling Medical College were held on Monday evening, the twenty-fourth of February, in the Westminster Church. The Commencement Address was delivered by the Rev. J. W. Grammar; the Valedictory to the class by Prof. Loving. The degree of Doctor in Medicine was conferred on eleven gentlemen. Their names, etc., will appear in the Catalogue.

STATUS OF THE AMERICAN MAN.—The Commissioner of Statistics of Ohio says that Prof. Henry and himself have been several

years engaged in defining the American man by accurate measurement. He presents only such of these as go to describe accurately the men of Ohio. For this purpose he gives the measurements of 300 farmers, miners and laborers in several counties; of 230 others in eleven villages; and five companies of Kennett's Cavalry—all native Americans. The following appears to be the general result of these measurements: That the man of Ohio is five feet nine and one-third inches high, and is *taller than any European nation* of which there are measurements. He is taller than the Belgian by several inches, taller than the English, and even than the Scotch Highlanders. The Highlanders, however, exceed the American *round the chest*, and are, on the whole, the stoutest. In complexion, eyes and hair, the *light* predominates over the dark. The prevailing hair is brown, and the prevailing eyes gray or blue. In one word, the native American is a *modified* German of the time of Tacitus, and such he ought to be, from his antecedents.

We are inclined to think these estimates will turn out to be incorrect. They make the men in Ohio too tall. A man five feet nine and one-third inches is too much for an average.

AMPUTATION OF THE CERVIX UTERI is the title of a monograph forwarded to us by I. Marion Sims, M.D., Surgeon to the Women's Hospital, New York. The paper was read before the State Society last year. Lisfranc was in the habit of performing this operation for what he considered incipient carcinoma. Recent researches, however, leave doubts about the character of his cases—they being simply inflammation with induration and hypertrophy of the cervix. From what we hear, Hugier of Paris now performs the operation oftener than any one else.

The operation is performed by the knife, scissors, and ecraseur. But the point of interest in the paper before us is the *method* of operating, which we give:

"When the patient was fully under the influence of ether * * I removed about five-eights of an inch (cervix) cutting at right angels and within half an inch of the vaginal insertion. On beginning the operation I expected to leave the cut surface to heal by the granulating process which usually takes five or six weeks, but before sponging the wound, and while waiting for the hemorrhage to cease, I discovered that the cut surface could be covered with vaginal tissue, in the same manner that the stump

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of an arm or leg is covered by skin after amputation by the circular method. This was done by passing four sutures of silver wire through the anterior and posterior borders of the wound, which when tightly drawn brought its edges into apposition in a straight line across the middle of the stump covering it completely, but leaving a small central opening for the os just over the outlet of the cervical canal. The operation was followed by no constitutional disturbance. The sutures were removed at the end of a week, the parts having healed entirely by the first intention."

Other cases are related of equal success.

The advantages of this method are seen, the author suggests, in the speedy recovery. In the old method the suppuration continued five or six weeks; in this no suppuration, the patient getting up in a week or ten days. In the former or old method a great risk of degeneration of tissue; in this little, if any, generally none.

No impediment to menstruation occurred in any of the cases, though the os was smaller than natural.

Surgeons generally understand that in amputating the tonsils it is unnecessary to cut out the entire gland, the removal of a section will suffice, the remainder will disappear by absorption. "So in amputating the cervex uteri, it is not necessary to cut it off even with the vaginal insertion to insure a good result; if half an inch of it be left it will decrease by modified nutrition."

THE LATE BATTLE AT FORT DONELSON.—On the receipt of the news of the battle at Fort Donelson a large number of medical men from Ohio, Indiana, and Illinois, with quantities of Hospital stores proceeded to the scene of distress. Every thing likely to be needed for the sick and wounded, was taken forward in great abundance. The steamer Collier was chartered at Cincinnati, especially for the service of transport to Fort Donelson.

Surgeon-General Weber, under orders from Gov. Tod, went forward to take charge of Ohio troops.

ETHER.—*Patent Right* don't seem to hold good for ether as an anæsthetic. The State District Court of New York, has declared the patent obtained by Dr. W. T. G. Morton, for the exclusive use of ether to be "void and the subject not patentable."

Good Opportunity.—The medical men, now in the service of the country as Surgeons, have an opportunity of adding very much to present knowledge as regards army diseases and gun-shot wounds. We do hope the privilege may be improved. McCleod has given us lately a very handsome volume on the Crimean war. But we are now having the material presented, which, if properly cared for, will be a treasure. We publish in this number a communication from R. N. Barr, M.D., on the diseases and casualties of the army in Western Virginia. The paper is a contribution to medical literature, as going to show the habitudes of typhus fever. We hope for the experience of others. How nice it will be to survive the hardships, privations and dangers, but nicer still to come home when the war is over with the consciousness of having improved the occasion.

We have again to apologize to our readers for delay in the appearance of the Journal. The fault was not ours. Our printer, generally so prompt, was disappointed in getting paper. In these times there is a little trouble in always "making connections."

New Books.—Just as we are going to press, we find on our table—

Gross' Surgery. Second Edition. Blanchard & Lea. 1862.

Gray's Anatomy, Descriptive and Surgical. Blanchard & Lea. 1862.

Guthrie's Commentaries on the Surgery of War in Portugal, Spain, France and Netherlands. J. B. Lippincott & Co. 1862.

These works will receive a notice at our earliest convenience.

Dr. Joseph Bell, in the Glasgow Medical Journal, recommends the application of cotton wool, saturated with the Linamentum Aqua Calcis, in the same manner as it is used in the treatment of burns, for the purpose of arresting the development of variolous pustules, and consequently preventing unsightly deformity. He states that he has used the application successfully in a large number of cases.

Case of Epilepsy, presenting Peculiar Features, suddenly and remarkably relieved by the Use of Arsenic.—Dr. Bristowe has at present under his care, at St. Thomas's Hospital, an epileptic lad, whose case is interesting, both from certain peculiarities in the symptoms, and from the success which seems to have attended the treatment employed.

The patient is a shop boy, 14 years of age, who has been subject to epileptic fits for upwards of two years. They came on without obvious cause, and at first were always nocturnal. They increased gradually, so that after a time he generally experienced two or three every night, and often one or more in the day. In May last he was admitted into the hospital, where he remained four months; and under the treatment there employed so far improved that during the latter part of that time, and for the following three months, the fits recurred only about once a month. A week before his last admission, however, they came on again suddenly, and with great severity. For the first three or four days of this time the fits followed one another night and day with great rapidity, but he had intervals of consciousness. For the last three days, however, the fits were still more frequent, and he continued between them in a state of insensibility. He was admitted on November 13 in the condition just described, but in so utterly prostrate a condition that his speedy death was anticipated. With the aid of a purge and of a blister to the neck he emerged from this critical state, and became quite conscious. The fits, however, though rendered less frequent, did not cease, and he was ordered to take two grains of sulphate of zinc in infusion of valerian three times a day. From this time up to December 7 the above line of treatment was pursued, the dose of sulphate of zinc being gradually increased to ten grains. During the whole of this period, however, his condition was a peculiar one. His lower extremities, which previously had been healthy, were feeble and uncertain in their movements, like those of a paraplegic patient, so that he was unable to walk; but there was no anæsthesia. He was therefore in bed, and for the most part in a semi-recumbent posture. But it was observed that whenever he tried to turn or otherwise move his legs, and especially, therefore, if he were made to get out of bed, a peculiar numbness or sensation of "pins and needles" crept from the toes upwards, and was followed in a few seconds by a fit—the fit lasting for about half a minute only, and being preceded by a pro-

longed and distressing scream. The truth of the statement just made was repeatedly verified by Dr. Bristowe. It was ascertained, however, that after a fit had been thus produced he enjoyed a perfect immunity for about a quarter of an hour, during which time he might move about as he pleased without any ill results; and it was further ascertained that by careful management he could, and usually did, prevent the occurrence of any fit during the day. They took place, however, frequently in the night, always preceded by a scream, and they increased in frequency nightly, so that on the night of December 6 they were so numerous that his constant screaming prevented any of the patients in the ward from getting rest.

On the next morning (the 7th) the medicine he had hitherto taken was ordered to be omitted, and five drops of liquor arsenicalis with compound infusion of gentian thrice daily were prescribed. He had no fit the following night, and none during the succeeding eight days. For two or three days he still suffered from occasional attacks of a numbness in the leg; these feelings, however, quite disappeared, and he recovered completely the use of his lower extremities. On the afternoon of the 16th he was visited by his mother and several of his friends who remained with him for some time. Almost immediately after they left him, the fit returned, and between five and ten P.M. came on every ten or fifteen minutes. During the night he had two; and during each of the two following nights he also had one or two attacks. From the 18th, however, up to the present date (the 31st), he had continued entirely free, and apparently quite well.

There are a few particulars to be added to the case. The boy was, and is, pale and anæmic-looking, but his digestive functions seem naturally performed; he has no cardiac or pulmonary symptoms. He is quite intelligent, and so far as can be ascertained has no spinal or renal disease. The mode of access of the fits, the way in which they could be produced at pleasure, and the way in which their occurrence could, during the daytime, be prevented, are all interesting, but do not perhaps call for special comment. The effects of the arsenic were, however, so sudden and so remarkable, that in order to show they were not fallacious, a few words seem necessary. It will be observed that the fits were nocturnal, and that they increased in severity up to the very night before the change of medicine was made. The change of medicine, further,

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was effected without calling his attention to the fact, or to the probability or possibility of any special effect from it; so that the sudden disappearance of the fit could scarcely have been due to any mental impression, and could scarcely have been a mere coincidence. It will be observed, too, that though the fits themselves ceased at once, the aura persisted for a time, and, further, that even after the latter had disappeared, the liability to have fits from any excitement continued; both of which points are quite compatible with the view that the amendment in this case was due to the use of arsenic, and indeed favor it.—*Med. Times and Gazette*, Jan. 11, 1862.

Clinical Remarks on Pleurisy.—*By Dr.* James Jones, *of the Metropolitan Free Hospital.*—It is unnecessary to remark on the great frequency of pleurisy. The fact that scarcely a thorax can be found in and after adult age, in which adhesions do not exist in some portion of it between the pulmonary and costal pleuræ, is sufficient to demonstrate its frequency. The generality of those cases, however, are what may be denominated simple adhesive inflammation of the pleura, unattended by effusion of serum in sufficient quantity to give physical indications of its presence. It is, perhaps, not generally known, however, to how great an extent pleurisy with effusion in sufficient quantity to give rise to compression of the lung to a degree sufficient to arrest its functions, prevails amongst the ill-clad, under-fed, intemperate operatives at the east end of London. The out-patients' room at this hospital is seldom without several well-marked cases of this kind. They continue to attend as out-patients, and get well under the most unfavorable circumstances. These cases, when compared with those which occur amongst the well-fed, well-cared-for middle classes, would almost induce the belief that the diseases were different. But is it not the circumstances of the patient which influence the course of the disease? In the well-fed patient, there is generally an amount of plethora, a condition of hyperæmia, which tends to effusion. The over-burdened vessels find relief by a disgorgement of the more fluid parts of their contents into the pleural cavity. The same condition tends to check absorption when the more acute stage has passed off. In the half-starved patient, on the other hand, the ill-supplied vessels have no inducement, so to speak, to

get rid of any portion of their contents, and, if forced to do so by the severity of the inflammation, they are always ready (and willing) to reabsorb it. How far the results of the same disease in two opposite conditions of the system may bear upon the treatment by venesection and other modes of depletion, is worthy of grave consideration. Have we not, in disusing venesection in pleuritis with plethora, given up a remedy capable of accomplishing much, and, if used with judgment, unmixed good? Is the disuse of venesection a necessary corollary of the supporting treatment of the present day? We resort to mercury, iodine, and other drugs to promote absorption. Do we not, in giving up venesection and depletion, deprive ourselves of a far more powerful and much less hurtful agent than any or all of those which we now employ? I do not wish to be understood as advocating the return to the use of copious, and frequently-repeated bloodletting, which, by destroying the vital stamina of the patient, either hastens his death, or, if he be so fortunate as to escape with his life, produces an amount of debility which leads to a slow convalescence. Moderate bloodletting, by reducing the mass of fluid in circulation, tends to encourage absorption, the early and rapid accomplishment of which is of so great importance in pleurisy. The ill-fed man, with a condition of the circulation the opposite to plethora, recovers from an attack of pleurisy which, in the plethoric, is sufficient to destroy life. The first case is interesting as an example of severe pleurisy running through all its stages, unmodified by treatment. It presents several points of much interest, especially with reference to paracentesis.—*Med. Times and Gaz.*, Jan. 18, 1862.

Benefactions to Hospitals.—Madame Jenny Lind Goldschmidt, on leaving Bristol recently, inclosed a check for £310 18*s.* 2*d.*, being the proceeds of a concert, to the mayor, with the request that he would distribute it in equal moieties between the Bristol Royal Infirmary and the Bristol General Hospital. Mr. Crawshay, of Montague Street, Russell Square, has presented a donation of £500 in aid of the funds of St. Mary's Hospital. The late Henry Batten Pool, Esq., of Road, has bequeathed to the Bath Eye Infirmary, £1000; to the Bath United Hospital, £1000. The late Mr. Joseph Garnett, of Newcastle-upon-Tyne, has bequeathed

legacies to the following charitable institutions of the town and district: the Infirmary, £500; the Dispensary, £250; the Eastern Free Dispensary, £250; the Eye Infirmary, £250; the Lying-in Hospital, £250; the Fever Hospital, £250; the Northern Institution for the Deaf and Dumb, £200; the Royal Victoria Asylum for the Blind, £200; Gateshead Dispensary, £250.—*Lancet*, January 11, 1862.

Suicides in France.—The average number of suicides each year in France, according to the *Annuaire Encyclopédique*, is 3899, of whom only 842 are females. It is in April, May, June, and July, that they are most frequent; and the age of the greatest number of persons committing them is from forty to sixty. Of the total, 2833 are accomplished by strangulation or drowning, 271 by suffocation with the fumes of charcoal, 395 by firearms, 153 by sharp instruments, 110 by leaping from high places, 98 by poison, and the rest by different means.—*Lancet*, January 11, 1862.

Prof. Riberi of Turin.—This eminent surgeon died very rich. He was born of poor parents By his surgical abilities, he was made professor of clinical surgery at 32. He was the friend and physician of Charles Albert, and was with him at his death. He also obtained the confidence of Victor Emmanuel. His reputation was very extensive. He was unmarried, and devoted all his time to study and practice. He is said never to have gone but once to a theatre. The greatest part of his large fortune was devoted as legacies to different medical charities. He left an annual sum of 2,500 *francs* to the Hospital S. Giovanni, to keep up the surgical anatomical museum which was there founded a year ago at his cost. He established a bursary for a student of medicine of the valley of Stroppo, his native place; also a rental of 1,000 *francs* to be given every twenty months to the most deserving member of the military sanitary corps; also a triennial prize of 20,000 *francs* to be awarded by the Medico-Chirurgical Academy; and numerous similar legacies. The remainder of his fortune—a million of *francs*—falls to his nephew, a law-student. His funeral, very different from his simple mode of life, was splendid; the municipality of Turin gave

him the same honors as they gave to Cavour, decreeing the fixing of a marble tablet over his dwelling, and a grant of land for his burial-place. A national subscription is now opened for the erection of a monument to him.—*British Med. Journ.*, Dec. 14, 1861.

Diagnosis applied to Fees.—A Paris physician dismissing from his consulting-room a well-dressed gentleman, the latter slid a piece of money into his hand. The old practitioner immediately diagnosticated by its weight that it was but a piece of 2 francs, however suitable its size might have seemed. He took no notice of the circumstance, nor even looked at his fee, but returned it, quietly observing, "You have made a mistake, sir; you do not owe me 40 francs, but only 20."—*Med. Times and Gaz.*, Feb. 1, 1862.

Death from Inhalation of Chloroform at Lisbon.—For the benefit of those who collect such accidents, we just allude to this unfortunate case, which was observed at Lisbon as far back as 1859. It is reported in the *Journal de la Société, &c., de Lisbonne*, and quoted by the *Gazette Médicale de Paris*, 4th Jan., 1862. The patient was a feeble subject, who was to have two cysts, one of the lid and the other of the tongue, removed. Two drachms of chloroform were poured on some lint, and hardly had he begun to inhale than he was dreadfully excited. Immediately on the subsidence of the convulsive movements the patient fell into a collaps, and had three violent *fits of sneezing*, upon which the heart ceased to beat. Breathing took place several times afterwards, at long intervals, and at last completely stopped. It was the first case at the San Jozé Hospital.

Local Anæsthesia.—Dr. Fournier has addressed to the Academy of Sciences a paper on the subject of Local Anæsthesia, and details a new process for its production, which is called "Chloracetization." His method for producing local insensibility to pain is that of exposing the part to be acted on to the fumes of a mixture of acetic acid and chloroform. "If," he says, "in a room, the tem-

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perature of which is upwards of 63° Fahr., the mouth of a thin glass bottle, half filled with a mixture composed of equal parts of pure crystallizable acetic acid and chloroform, be exactly applied to a clean and healthy skin, not deprived of its epidermis, and if this phial be constantly maintained at the temperature of the hand, complete anæsthesia of the part included by the orifice of the bottle will be attained." M. Fournier proposes to utilize this discovery for surgical purposes by directing the vapors of the chloro-acetic compound upon the parts to be rendered insensible to pain by means of a retort, the rest of the limb being protected by diachylon plaster from the benumbing action of the anodyne emanations; and suggests the employment of his method in those cases where general anæsthesia may be deemed inadmissable.—*Lancet, Jan.* 4, 1862.

Potassio-tartrate of Iron in Rheumatism.—Rheumatism is one of those affections which at times resist all the ordinary modes of treatment in use, though occasionally it will readily yield to a remedy not commonly employed in that affection. This result we have observed in a case under Dr. Willshire's care, in the person of a somewhat pallid girl, Frances S———, aged twenty years, who was admitted on the 26th November last, with rheumatism of of an erratic character, the pains flying about, as it were, to various parts of the body. To this she had been subject for the last three years, and nothing seemed to produce any marked improvement; she was, therefore, ordered a mixture containing the potassio-tartrate of iron, which has produced a decidedly beneficial effect in a short period of time, the pains having become gradually diminished, but not as yet wholly gone, and her health is better. Although pale, she has always menstruated with great regularity. In obstinate and suitable cases, this excellent preparation of iron should be borne in mind.—*Lancet, January* 11, 1862.

Prevalent Diseases in Paris and London.—In the *Gazette des Hôpitaux* of Jan. 26th, it is stated that a general epidemic of *la grippe* prevails at present in Paris, but which presents the same phenomena as other epidemics of the same malady.

In the *Med. Times and Gaz.* of Feb. 1, it is stated that the atmospheric conditions are very unfavorable for health. "Cold, damp, and fog, loaded with organic vapors, not only have produced a notable influenza here, but have raised the sum of mortality from all diseases whatever. Scarlatina and diphtheria are very prevalent; croup, whooping-cough, and continued fever have nearly doubled their ravages during the last week, and consumption and every other disease exhibits a high rate of mortality. We see scarcely any deaths ascribed to influenza simply, yet it is very prevalent, and in some cases associated with unusual symptoms of gastric complication. In one family which has come under our observation, out of sixteen inmates, ten have been ill; each seized in succession quite suddenly with vomiting, headache, shivering, great prostration, and pain in the limbs, and severe and catarrhal symptoms. Each case lasted in its severity about five days. In this house there was reason to suspect that sewer vapors had a share in the production of the mischief. From inquiries we have made, we have reason to believe that influenza is at present more prevalent among the classes in easy circumstances than among the poor."

Increase of Frequency of Croup in Paris.—M. Roger, after giving a statistical account of this affection as observed in the Hôpital des Enfants, Paris, since 1820, comes to the conclusion that it has prevailed, during the last six years, from 30 to 100 times more frequently than it did forty years ago. It is true that, in the meantime, the population of Paris has doubled, and that the success which has attended tracheotomy has caused many additional infants to be brought to the Hospital; but still these causes will not explain the great increase of diphtheritic affections during recent years. With respect to the results of tracheotomy, of 164 operations performed in 1859, 40 were successful; of 130 in 1860, there were 23 successful; and of 82 in 1861, there were 25—the mean success for the three years having been 24.68 per cent., a figure almost identical with that furnished by MM. Roger and See's statistics in 1858. At the Hôpital des Enfants, therefore, one-fourth of the patients attacked by croup are cured by operation; but if we take into account desperate cases which are not operated upon

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(about a ninth of the total of cases,) the total number of cures becomes reduced to 19 or 20 per cent.—*Med. Times and Gaz., Jan.* 4, 1862, *from Gaz. Hebdom, No.* 50.

Temperature and Ventilation.—"Generally speaking," says the *Siècle,* "during winter, apartments are too much heated. The temperature in them ought not to exceed 15° Centigrade (59° Fahrenheit;) and even in periods of great cold, scientific men declare that 12° or 14° had better not be exceeded. In the wards of hospitals, and in the chambers of the sick, care is taken not to have greater heat than 15°. Clerks in offices, and other persons of sedentary occupations, when the rooms in which they sit are too much heated, are liable to cerebral congestion and to pulmonary complaints. In bed-rooms, and particularly those of children, the temperature ought to be maintained rather low; it is even prudent only rarely to make fires in them, especially during the night. In addition to keeping up only a moderate temperature, the windows of all rooms, whatever the weather, ought to be opened for a time every day, so as to renew the air."—*Lancet, January* 11, 1862.

Life Assurence in France.—From the tenor of a paper inserted in a recent number of *L'Union Médicale* (1862, No. 2,) with the entire approbation of its editors, it would seem that some members of the profession in France regard the duty of the medical practitioner with respect to replying to the queries of assurance offices in a somewhat extreme light. With us, the question has only been as to the payment for the information afforded, such payment now being generally admitted as due from the offices. In France, however, they are questioning the right of the offices to ask the questions at all, and of the medical practitioner to reply to them; maintaining that, even with the candidate's own permission, such information should not be afforded, it being often requisite to keep secret, even from our patients themselves, our exact opinion as to their maladies and prospects of living. The objectors, too, seem to have little faith in the promises of secrecy on the part of the companies, believing that a man who has been refused will always

find out the part his attendant has had in the result. This is perhaps more likely to happen in France, since it seems to be sometimes there the practice for the candidate himself to forward the queries to his attendant, and even to wait for the reply in some instances. It is argued that the entire *onus* of proving the assurability of the life proposed should be thrown upon the medical officers of the companies.—*Med. Times and Gaz., Jan.* 18, 1862.

Acnometer, or Measurer of Hearing.—Accurately to determine the amount of difficulty of hearing, Dr. Doenhoff of Orsoy *(Prager Vierteljahrschr.)* uses a rod three feet high, attached to a circular piece of board one foot in diameter. The board is provided all around with a projecting edge, so that small bodies thrown on it can not roll off. The rod is graduated in inches, or still smaller divisions, from below upward. He also has three small balls, made respectively of wax, wood and lead, each measuring one line in diameter. To measure the difficulty of hearing, he commences with dropping the waxen ball on to the board from a height marked on the rod by the figure 5. If the patient does not hear the sound, he lets it fall from a higher mark, and he thus increases the hight until the patient distinctly hears the ball strike the board. If this be, for instance, from a hight of 28 inches or marks on the rod, he calls the patient's difficulty of hearing 28, waxen ball. But if the patient hears no sound, even if the ball falls from the highest mark on the rod, he tries the same experiment with the wooden ball, and if this also gives negative results, with the leaden one. If the patient hears the sound of the latter falling from the hight of 5 marks, that patient's hearing is 5, leaden ball. For the severest cases of hard hearing a tin-covered board is employed with leaden balls of increasing size, some as large as musket-balls. By this apparatus, the amount of improvement, during and after treatment, can also be admirably watched and determined.—*Amer. Med. Monthly,*

Food in Typhoid Fever.—Dr. Hérard confirms the opinion expressed some time ago on this continent as well as in England, that in the management of typhoid fever the all-important, the capital question is that of food; prolonged abstinence leads to the

most disastrous results. One lady patient was sinking steadily under a strictly enforced abstinence; when the pulse numbered 120, nocturnal agitation with wandering delirium, vomiting and diarrhœa had set in, the effects of nutriment were tried. At first, only a few drops of iced beef-tea could be swallowed with the utmost difficulty; by and by the food remained on the stomach, and in proportion to its increase, the pulse fell, the delirium yielded and the patient recovered. Mr. Marotte has established that vomiting, diarrhœa and delirium, more especially the latter, are characteristic of starvation. Trousseau also lately pointed out the striking analogy existing between the more serious symptoms of typhoid fever and those of autophagy consequent upon protracted abstinence.—*Berkshire Med. Journ., from Champonére's Journal.*.

One of the lasting evils of war is the large number of maimed persons that are thrown upon the charities of the country. Government gives to such persons, it is true, a pension which, if properly husbanded, is capable of relieving the individual from pressing want. We would suggest the propriety of supplying such persons, as far as possible, with artificial limbs, under proper surveillance, and withholding a monied pension, at least of any considerable amount. Mechanical surgery would be capable of rendering many an idle pensioner capable of self-support. This would be economy in Government, and might give to society many an active and useful member who would be otherwise a burden upon the public.—*American Medical Times.*

Aconite and Nux Vomica Antidotal to Each Other.—In the case of a negro boy who had swallowed a destructive dose of the tincture of aconite, and was rapidly sinking in spite of emetics and external irritants, Dr. D. D. Hanson administered three drops of the tincture of nux vomica. In a few minutes the heart's impulse returned with accelerated vigor, and the respirations were correspondingly improved in steadiness and depth. After a repeated dose, twenty minutes later, vigorous emesis followed the tickling of the fauces with a feather. The next morning the patient was fully recovered.—*Boston Med. and Surg. Journ.*

Arsenic Smoking in Asthma.—Dr. F. G. Julius mentions the case of a French lady, who had been subject to spasmodic asthma for twenty-five years, and, after having tried every species and form of medicine, obtained finally a lasting relief from smoking arsenious acid. At first she took a quarter of a grain three or four times daily in a cigarette, subsequently increasing the dose. The smoke is always swallowed. Swelling of the eyelids and slight pricking pains in the stomach, when she first commenced, were the only outward symptoms. Any threatening attack is at once checked by renewed smoking.—*London Lancet.*

New Test for Diabetes.—Upon a clean slip of tinned iron place one or two drops of the suspected material, and hold it over a spirit lamp; the fluid will speedily evaporate, leaving, if the process be arrested at that point, scarcely a trace upon the metallic surface. Continue the application of heat; in a few moments after the desiccation is complete, a spot of an inch or so in diameter, over which the drops spread with the first ebullition, will gradually assume a rich reddish-brown color, with a brilliant lustre, as if coated with a film of Japan lacquer, resulting from the conversion of the saccharine element into caramel.—*London Pharm. Journ.*

Alum and Rhatany in Saccharine Diabetes.—M. Demeaux, in a communication to the Acedemy of Sciences, intended as preliminary to a more detailed statement, declares that he has treated diabetes very successfully by means of calcined alum and extract of rhatany given in equal parts.—*Gazette Méd. de Paris.*

Prof. Deville, formerly of the Lind Medical College of Chicago, has been appointed Professor of Anatomy and Surgery in the Manchester Royal School of Medicine and Surgery.

Dr. Elder of Knightstown, Ind., has been employed by Assistant-Surgeon John Moore to open and take charge of a Hospital at Catlettsburg, Ky. This Hospital is intended for the sick of Col. Garfield's command.

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